

NORTHERN UTAH STATE VETERANS NURSING HOME
Department of Veterans Affairs

DFCM Project No. 08078490

August 8, 2008



NJRA ARCHITECTS
370 East 500 South Suite 101
Salt Lake City, Utah 84111
801.364.9259

Northern Utah State Veterans Nursing Home

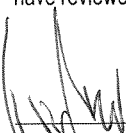
PROGRAM - VOLUME 1

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NORTHERN UTAH STATE VETERANS NURSING HOME

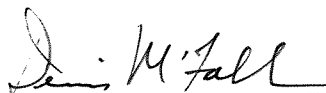
Review Signatures

We have reviewed the program and warrant that it adequately represents our request for a facility to fulfill our mission and programmatic needs. All appropriate parties in the agency have reviewed it for completeness and accuracy.



Terry Schow
Executive Director
State of Utah Department of Veterans Affairs

8/14/08
Date



Dennis McFall
Deputy Director
State of Utah Department of Veterans Affairs

08-19-08
Date



Darrell Hunting
Project Manager
Division of Facilities Construction & Management, State of Utah

8-19-008
Date



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Northern Utah State Veterans Nursing Home

NORTHERN UTAH STATE VETERANS NURSING HOME

Participants

Participants:

The following is a list of various individuals represented during the Programming Phase:

State of Utah, Division of Facilities Construction & Management

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State of Utah Department of Veterans Affairs

Dennis McFall, Deputy Director
Jeff Hanson, State Officer

Program Architect & Consultants

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1.0 EXECUTIVE SUMMARY



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Northern Utah State Veterans Nursing Home

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Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

1.1 MISSION STATEMENT

Veterans Advocacy

"To honor and recognize the service of Utah Veterans as their advocate relative to veterans benefits, assist former and present members of the U.S. Armed Forces both active and reserve and their dependents in preparing claims for and securing such compensation as health services, education and vocational training, and other benefits or privileges to which they may be entitled under Federal or State law or regulation by reason of their service in the military."

The mission of the Department is to provide advocacy for Utah's Veterans, and to assist veterans and their families in understanding and filing for state and federal Veterans benefits. Department Outreach Workers and Veteran service officers under contract provide an outreach assistance program to rural Utah veterans.

The Department operates an 81 bed Veterans skill nursing facility in Salt Lake City, which includes a Special Needs Unit. The Department also oversees the operation of the State Veterans Cemetery. The Department conducts numerous workshops and briefings around the state on topics ranging from veterans benefits to veterans' entrepreneur workshops.

The following information will establish the criteria for the design and construction of the Northern Utah State Veterans Nursing Home:

1. Total project construction budget cannot exceed \$16,146,589.
2. The building may utilize the principles of the Neighborhood Concept to the fullest extent that the budget will allow.
3. The building exterior should be attractive for residents and visitors and evoke a residential image.
4. The building should have resident common areas which incorporate natural light.
5. The building should have a highly pleasing residential environment for the occupants.
6. The building should take advantage of available sight lines and vistas to the outside environment.
7. The building should be highly energy efficient.
8. The building should be designed to have a minimum 50-year usability.

The applicant must apply Davis-Bacon labor wage provisions to VA construction.



1.2 PROGRAMMING PROCESS SUMMARY

The programming process was conducted under the direction of the State of Utah, Division of Facilities Construction and Management and the State of Utah Department of Veterans Affairs. The specific programming requirements were documented by the Programming Consultant Team as a result from conversations with the representatives from the owner and user groups, site visits to comparable facilities and the Federal Veterans Administration standards and guidelines for nursing home facilities.

The total budget for this facility is \$19,700,000 of which \$16,146,589 is allocated to construction hard costs. The information contained in this program is intended to define the features, attributes and costs of the project within the limits of this funding.

The space planning area requirements for this project were developed from the VA Space Planning Criteria, Chapter 106 which is the federal agency's Space and Equipment Planning System (SEPS) Version 1.6 adopted in March 2008. This document outlines criteria for the renovation, modernization and new construction for VA nursing homes. The SEPS criteria takes into consideration the total number of beds, number of beds per nursing unit and number of specialty care residents. This information is used to calculate square footages for common resident areas and the total square footage of the facility. The objective is to aid planners, designers and administrators of VA Nursing Home care facilities in providing state of the art healthcare environments and services to VA clients.

The SEPS criteria are used as guidelines rather than requirements. Certain assumptions lead to deviations from these criteria due to estimated project size, number of beds, number of nursing units, limitations of the site and the project construction cost total budget. The major assumption in the programming phase was the number of residents within each nursing unit.

It is anticipated that the building will be divided into four different Residential Houses. Each Residential House will serve 30 residents. It is anticipated that the building will have two distinct residential neighborhoods with sixty residents in each neighborhood. One of the resident houses will be a specialty resident house which provides a secure environment for residents with dementia such as Alzheimer's patients.

It is the VA's preference to create only semi-private and/or single bedrooms to the fullest extent possible. Those who have served the nation will live in these rooms and their dignity, privacy and special needs shall be respected and represented by the sympathetic and conscientious design of the facility.



1.3 PROJECT DESCRIPTION

1.3.1 Total Facility Summary

The Northern Utah State Veterans Nursing Home will consist of a single-story building of approximately 73,000 square feet on 13.45 acres of land in Ogden at the northeast corner of 1200 West Street and Bill Bailey Boulevard. The site is currently an open meadow which is generally flat and consists of some wetlands (to remain undisturbed) at the extreme southern end. The Northern Utah State Veterans Nursing Home will provide licensed nursing, specialized preventative, therapeutic, and rehabilitative care to 120 long term care residents in a home-like environment 24 hours per day, seven days per week. Acute care services for the residents will be arranged separately with local area hospitals.

The facility shall be a state of the art nursing home project which incorporates several key design features. The building will be designed as an energy efficient project in order to decrease the relative use of consumptive power and minimize long term energy life-cycle costs. However, the building is not intended to meet the more stringent requirements for the state's high performance buildings program.

The residents' dignity, privacy and special needs are first and foremost in the consideration of all aspects of this significant project. As such, the building will incorporate the latest design objectives for the overall well-being of the residents. This cutting edge nursing home facility will embody the concept of 'culture change' which creates an atmosphere geared toward a residential environment and attempts to steer clear of the more-institutionalized nursing homes of the past. The new facility will emphasize the need for natural light and views to the outdoors, access to outdoor gardens, comfortable and safe materials, inviting dining experiences and living spaces that mimic elements of the comforts of home.

Current examples and models of the culture change concept are demonstrated in nursing homes which use a neighborhood concept. This is in keeping with the design philosophies of the *Eden Alternative*, and the *Greenhouse Concept*. The ultimate goal of these concepts is to provide a comfortable setting which is achieved by creating residential neighborhoods which in turn serve residential houses (wings) that consist of fifteen residents each. Thirty of the residents will be housed in a specialized secured area for patients with issues of dementia such as Alzheimer's.

The overall site development will include connections to existing on and off-site utilities. A single drive approach and site access will link the project to 1200 West Street. It is anticipated that the facility will provide 150 on-site parking stalls with adequate handicapped accessible stalls. The main entrance to the building will consist of a covered drop off area and a separate service / delivery and loading dock area will be located away from the main entrance.



Executive Summary

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

1.3.2 Space and Area Program Summary

The following areas are grouped with respect to functional relationships. These space planning areas are organized here and throughout the programming document per the categories identified in the VA Space Planning Criteria Chapter 106, SEPS Version 1.6. Refer to **Section 4.1 Space and Area Program** for additional information.

AREA SUMMARY	NET	GROSS
B – GENERAL RESIDENTIAL HOUSE: RESIDENT AREAS	26,760	33,450
C – SPECIALTY RESIDENTIAL HOUSE: RESIDENT AREAS	9,910	12,388
SUBTOTAL, RESIDENTIAL AREA	36,670	45,838
E – RESIDENTIAL HOUSE: SUPPORT AREAS	1,640	2,050
F – RESIDENTIAL NEIGHBORHOOD: PATIENT AREAS	1,350	1,688
G – RESIDENTIAL NEIGHBORHOOD: SUPPORT AREAS	1,160	1,450
H – RESIDENTIAL NEIGHBORHOOD: STAFF & ADMIN. AREAS	220	275
I – THERAPEUTIC AREAS	1,330	1,663
J – RESIDENTIAL SUPPORT AREAS	11,190	13,988
K – STAFF AND ADMINISTRATIVE AREAS	3,400	4,250
L – STAFF LOCKERS, LOUNGE AND TOILETS	260	325
SUBTOTAL, SUPPORT AREA	20,550	25,688
TOTAL	57,220	71,525



Executive Summary

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

1.3.3 Project Schedule

The following schedule outlines the estimated time line of the activities of the entire project, including design, construction, and date of occupancy.

SCHEDULE:

TASK NAME	DURATION	EARLY START DATE
DESIGN TEAM SELECTION	60 DAYS	JULY 29, 2008
ENGINEERING & DESIGN	60 DAYS	OCTOBER 21, 2008
PLAN REVIEW & APPROVALS	30 DAYS	DECEMBER 21, 2008
CONSTRUCTION	365 DAYS	JANUARY 20, 2008
OCCUPANCY		NOVEMBER, 2009
PROJECT DURATION	515 DAYS	

The DFCM desires a project completion date of November 9, 2009. It will take great efforts of the architectural / engineering / construction team in coordination, planning, design and construction to achieve this completion date.

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2.0 SITE ANALYSIS



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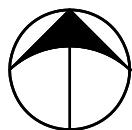
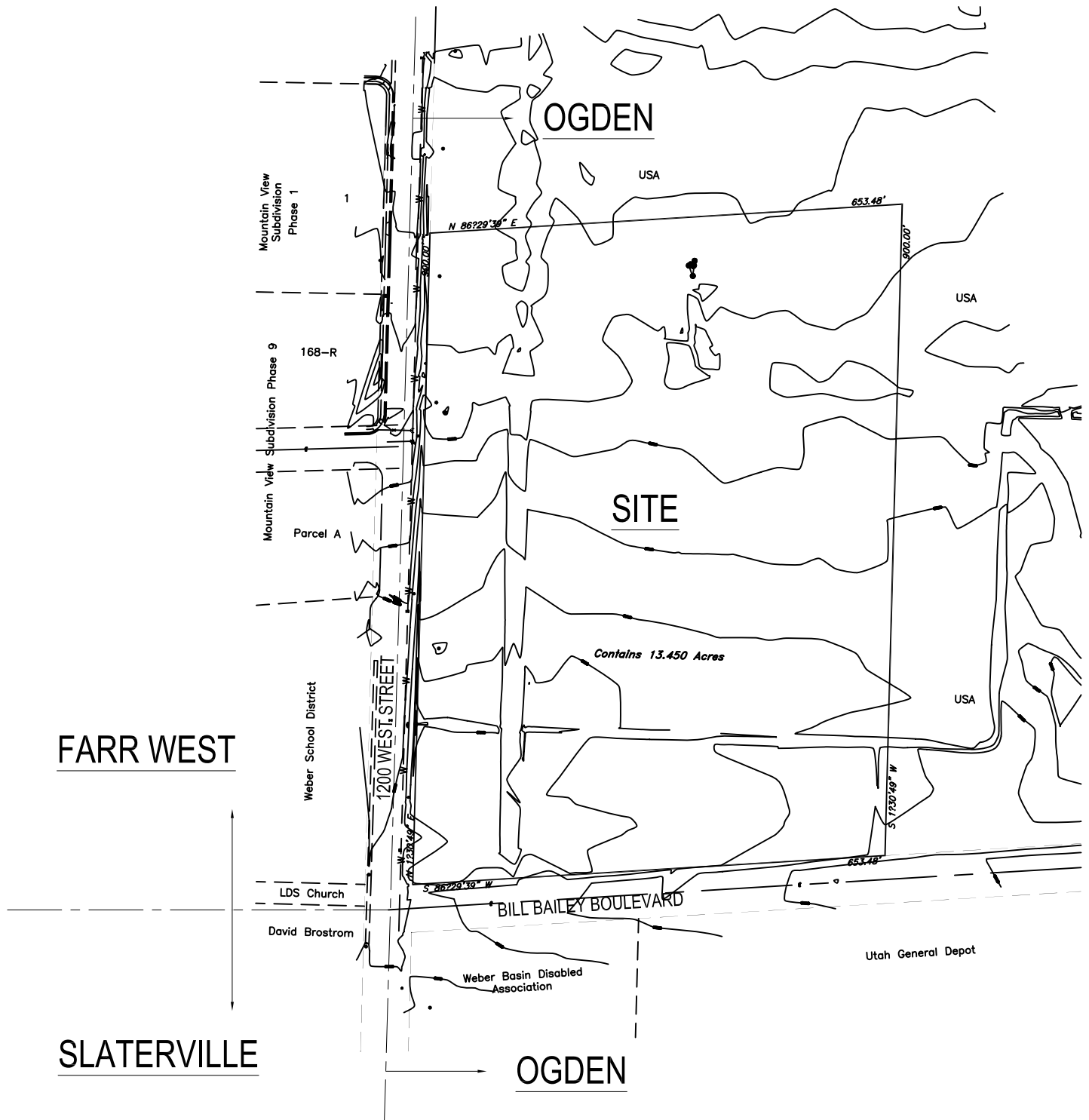
2.1 SITE AND LOCATION

The site is located along 1200 West and approximately 1100 North in Ogden. Far West City owns the West side of 1200 West and Ogden City owns the East side of 1200 West. All access to 1200 West will be administered by Ogden City. However, utility crossings that extend beyond the center line of 1200 West will involve Farr West City for pavement repairs. The site is generally 900 feet long in the north-south direction and 650 feet wide. The site is vacant at this time with weeds and a few trees. The site is bounded on the west by 1200 West Street and by Bill Bailey Boulevard to the south. Areas north and east of the site are open field.

The southern portion of the site is a wetland area that is delineated on the survey by a chain link fence. Mitigation will be necessary if this area is disturbed in accordance with Federal and State requirements.

The site is relatively flat with the highest area at approximately 4256 on the northeast portion of the site and the lowest area at approximately 4250 on the southwest portion of the site. A 40' sewer easement along the west property boundary will need to remain as part of the new site plan. Due to the shallow sewer system, site fill under the building pad will be necessary to allow the system to gravity feed into the existing sewer system.

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SITE PLAN - BOUNDARIES

1" = 200'



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Department of Veterans Affairs
**Northern Utah State
Veterans Nursing Home**

DFCM Project #: 08078490
1200 West Street & Bill Bailey Boulevard
Ogden, Utah

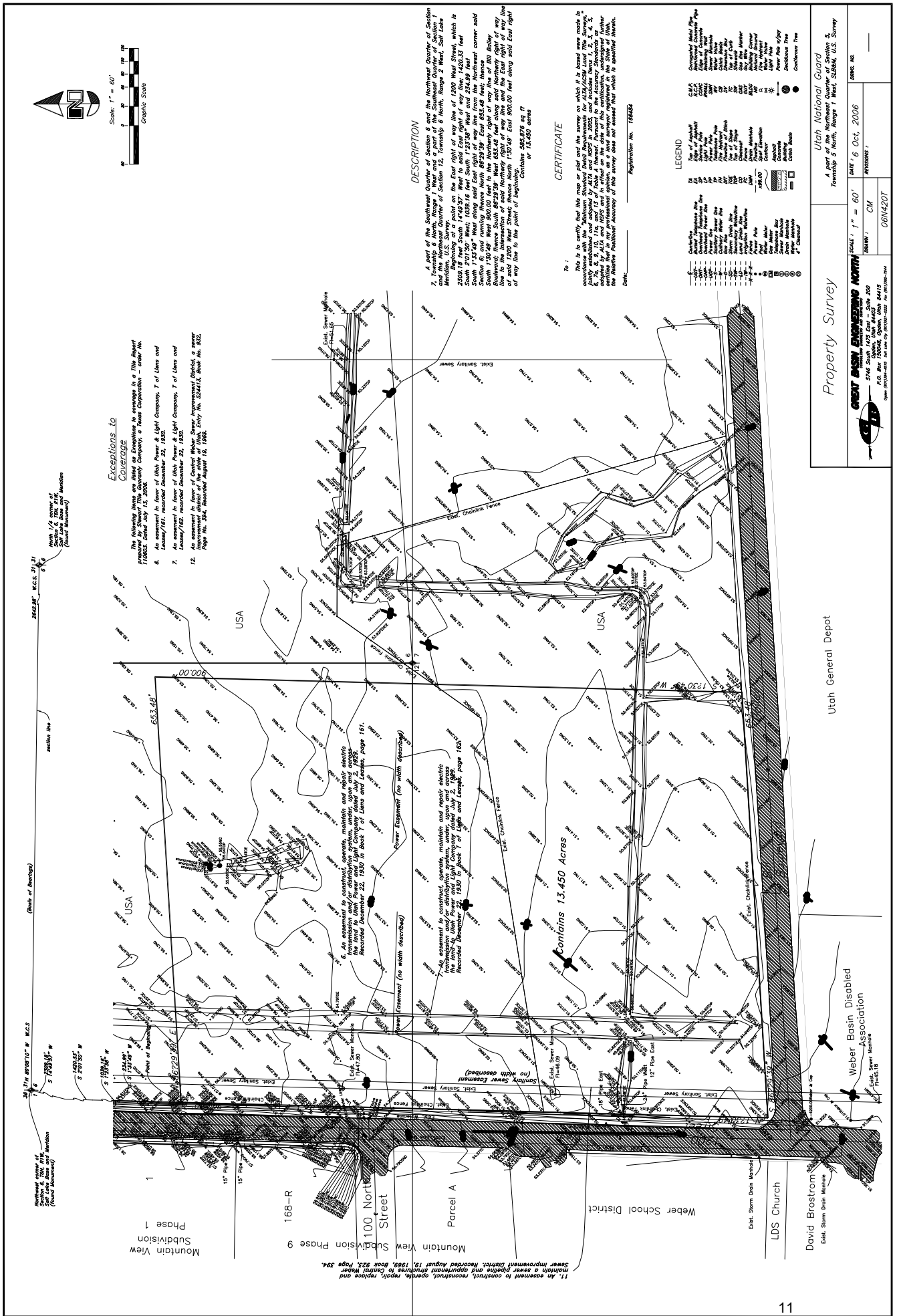
NJRA Project #: 08008.00

Date: July 15, 2008

Site Plan

Boundaries

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2.2 EXISTING SITE CONDITIONS AND PROGRAM REQUIREMENTS

2.2.1 Climate, Views and Key Open Spaces

The site is located in Ogden, Utah. Temperature for this location ranges from winter cold temperatures of 0 to 20 degrees Fahrenheit and summer temperatures of 70 to over 100 degrees F. The warmest month of the year is July with an average maximum temperature of 90.0 degrees Fahrenheit, while the coldest month of the year is January with an average minimum temperature of 20.10 degrees Fahrenheit. The highest temperature recorded at the site is 117.3 degrees Fahrenheit and the lowest temperature is 0.9 degrees Fahrenheit over the period between January 1, 2005 and May 29, 2008.

Temperature variations between night and day tend to be moderate during summer with a difference that can reach 27 degrees Fahrenheit, and fairly limited during winter with an average difference of 17 degrees Fahrenheit.

The annual average precipitation at Ogden is 23.67 inches. Rainfall is fairly evenly distributed throughout the year. The wettest month of the year is May with an average rainfall of 2.90 inches.

The prevalent direction of the wind comes from the south with an average wind speed of 2.0 mph. Wind gusts at the site have an average high of 36.0 mph.

The dominant views from the site are to the east with an impressive panorama of the Wasatch Mountains. The views shall remain unobstructed and consideration should be given to providing the residents with clear sight lines to the mountains from the resident rooms as much as is possible.

The site is undeveloped currently and a wetlands area occurs at the southern end of the site. The wetlands area shall remain undisturbed.

The site is bordered on the south by Bill Bailey Boulevard which provides the access point to the Golden Spike Arena. To the west of the site and across 1200 West Street is Wahlquist Junior High School and a residential neighborhood consisting of fairly new homes in a subdivision typical of this region.

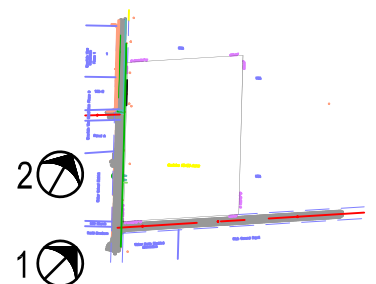
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1 SOUTHWEST CORNER



2 1200 WEST STREET



Northern Utah State Veterans Nursing Home

SITE PHOTOS



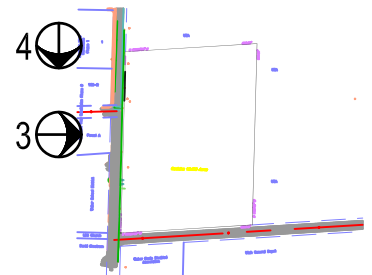
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VIEW EAST



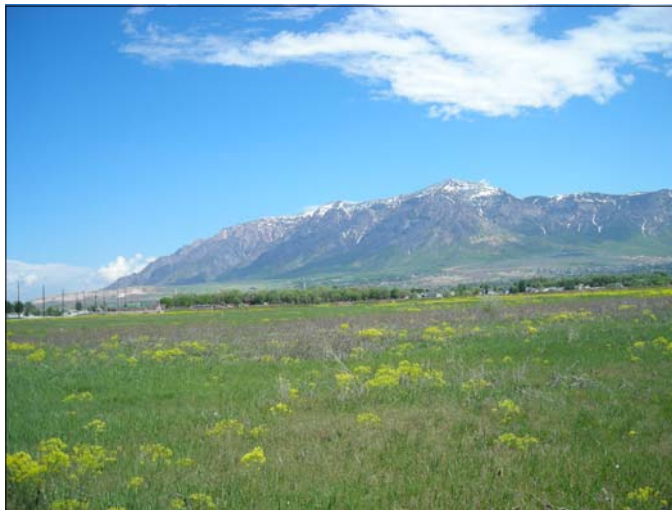
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VIEW SOUTH

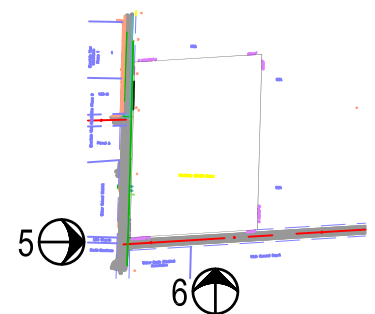




5 SOUTHWEST CORNER



6 VIEW NORTH



Northern Utah State Veterans Nursing Home

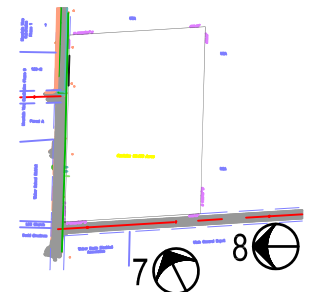
SITE PHOTOS



7 VIEW NORTH



8 VIEW WEST

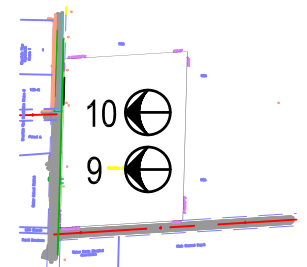




9 WAHLQUIST SCHOOL



10 1100 NORTH STREET



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Northern Utah State Veterans Nursing Home

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2.2.2 Geoseismic Fault Summary

Seismic loads for the building shall be determined per the limits established by the International Building Code (IBC). The most direct method for locating existing faults is to excavate trenches generally 8 to 12 feet deep. The structure shall be designed in accordance with Section 1613, Earthquake Loads, of the IBC 2006 edition.

There are no active faults known to pass through or immediately adjacent to the site. The nearest active fault is the Wasatch fault approximately three miles east of the site. The Wasatch fault zone is considered capable of generating earthquakes as large as magnitude 7.4.

The site is located in an area that has been mapped by Weber County as having a "high liquefaction potential". Liquefaction-induced settlements could be as high as one inch.

Refer to the Preliminary Geotechnical Study prepared by Gordon Spiker Huber Geotechnical Consultants at the end of this program for additional information regarding the subsurface conditions.



2.2.3 Preliminary Soils Report Summary

The results of the study show that the proposed structure may be supported upon conventional spread and continuous wall foundations established upon suitable natural soils and / or structural fill extending to suitable natural soils.

The most significant geotechnical aspects of the site are the presence of potentially liquefiable soils encountered within borings B-1 and B-2, the loose / disturbed soils that were encountered to a depth of four inches in each boring, and the moderately high groundwater table.

Liquefaction may occur in some of the saturated sand and gravel layers encountered in borings B-1 and B-2 during the design seismic event (two-thirds of the MCE event). The other remaining borings (B-3 through B-5) did not contain liquefiable soils to the depths explored of 16 feet. Further details concerning liquefaction are discussed in Section 5.8.5 of the geotechnical study.

Loose / disturbed soils were encountered to a depth of four inches in the borings. These loose / disturbed soils will exhibit variable and, most likely, poor engineering characteristics and are not suitable for the support of buildings, pavements, or exterior flatwork.

Groundwater measurements taken two weeks after drilling indicate groundwater is as shallow as 4.4 feet below the surface. It is strongly recommended that site grading cuts be kept to as minimal as possible.

The on-site soils can be utilized as structural site grading fill if they meet the requirements of such. The fine-grained soils will require that very close moisture control be maintained during placement and compaction. It will be very difficult, if not impossible, to properly place and compact these fills during wet and cold periods of the year.

Refer to the Preliminary Geotechnical Study prepared by Gordon Spiker Huber Geotechnical Consultants at the end of this program for additional information regarding the subsurface conditions.



Site Analysis

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

2.2.4 Topographic Survey Summary

The site is relatively flat with the highest area at approximately 4256 on the northeast portion of the site and the lowest area at approximately 4250 on the southwest portion of the site.



Site Analysis

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

2.2.5 Wetland Delineation Report Summary

Four wetlands totaling approximately 1.1 acres were delineated on the area. Of these, three appeared to be man-induced wetlands, while one appeared to be a seasonal wetland. One of the man-induced wetlands may not fall under Corps of Engineers jurisdiction if its hydrophytic plants are solely dependent upon run-off from the Browning Reserve Center's military equipment parking area located up gradient of the wetland. The Corps of Engineers should further evaluate the status of this area and of another area near the Swale Wetland exhibiting ambiguous wetland characteristics.

No federally listed threatened or endangered species were observed onsite. The area does not appear to possess habitat for the listed species known to occur in the area. Concurrence from the local office of the USFWS should be requested before the project is initiated.

Due to the limited extent of wetlands within the Ogden LTA, the project should not impact wetlands in any manner.



2.3 SITE UTILITIES

2.3.1 Existing Utilities to be Extended and Utilized

Water System:

A waterline is located on the east side of 1200 West Street. This 12" water line is owned and operated by Bona Vista Water Improvement District. The district will service parcels outside of the district. For the parcel to be annexed into the Bona Vista District, the parcel will first need to be de-annexed from the Ogden District. This will require approval from Ogden City. Flow testing has determined the capacity and pressure of the existing water line along 1200 West is 1220 gpm at 74 psi. The flow test data are included at the end of this section, and the 12" line should have the adequate volume and pressure for the new project.

If the Bona Vista culinary water is used for irrigation, the maximum area that can be irrigated with culinary water is 15% of the improved site area. There is also a pressure irrigation system (secondary water) adjacent to the site that is owned by Pineview Irrigation Company that shall be used for irrigation purposes on the site.

Water Use Costs:

Annexation cost to be accepted into the Bona Vista District is \$1000/acre. The Board also must approve all applications and this is a minimum 2 months process. The plan review fee for connection is \$1000 plus \$300/Acre. The monthly cost for commercial use is \$10 for the first 10,000 gallons plus \$1.15/1000 gallons used more than 10,000 gallons. If you are not annexed into the district, the costs are 1.5 times these indicated monthly charges. The fire loop connection will also cost approximately \$800 per connection for an 8" fire line connection. Irrigation costs are based on the connection size and yearly fees vary based on the size of connection. There is also a connection fee based on the connection size required for the site.

Sewer System:

There is a sewer line within the property limits. The 40' sewer easement will need remain in place on the new site development. The sewer line is about 6 to 7 feet deep through the property. The 30" Sewer line is owned by Central Weber Sewer District. We will need to connect at the top of the 30" line and the new service lateral will need to connect into a manhole if the lateral is 6" in diameter. The elevation for connection on the low end of the site will be approximately 4249.00. Fill over the piping will be necessary to maintain a 4' depth over the sewer lateral. Site fill to create the necessary slope from the building to the sewer will also be necessary. The lateral connection for the facility is assumed to be a 6" lateral.

Drainage System:

There is a drainage ditch approximately 175 to 200' north of the south property line that routes through the site. This ditch is part of the wetland on the site. The water is collected at 1200 West Street and appears to be routed to a drainage pipe on the west side of 1200 West. The ditch is collected in to a 24 and 18" diameter pipe. There is evidence of a drainage line on the west side of 1200 West however; there is no survey data on the depth or size of the line. The system will need to detain runoff into the system in accordance with Ogden City Standards.

Natural Gas System:

A natural gas line routes along the west side of 1200 West. Coordination with Questar will be necessary for the new connection.



2.4 SITE CONSIDERATIONS

2.4.1 Parking and Vehicle Access

The site shall be accessed directly from 1200 West Street. It is logical that the drive approach for the site will be directly across from 1100 North Street to the west. The drive access approach will need to be of sufficient width to accommodate emergency vehicles such as large fire trucks. The parking and paved areas shall be designed to allow for adequate turning clearances and circulation for large emergency vehicles.

The building will feature a covered porte-cochere at the main entry for resident drop off and guests entering the facility. It is estimated that the site will have parking for 175 vehicles for the staff and the resident's guests. It is estimated that a minimum of six accessible parking spaces will be provided. For medical facilities it is common to have 10 percent of the number of stalls dedicated to accessible parking spaces. It will be at the discretion of the VA to determine the final number of accessible stalls during the schematic design phase of the site.

Visitor parking shall be provided to the building and a minimum of 50 stalls should be provided for this use.

During programming it was determined that the building will most likely occupy the eastern portion of the site and toward the north of the property. This location will provide a maximum enjoyment of the spectacular views in this area. Locating the building toward the north end of the site will alleviate any conflicts with the pre-existing wetlands onsite. It is therefore logical that parking will be provided toward the west side of the site and adjacent to the building. A generic site plan has been provided by the VA in the design guide.

A service road for delivery access is a requirement of this program. The design of the service road will accommodate the code requirements and it shall be distinct from the building entry. The service road shall not interfere with the outdoor resident areas.

GRAPH SHEET FOR HYDRAULIC CALCULATIONS (N 1.85)				
Job Name <u>NTRA Architects (1200 W)</u>		No. _____		TOTAL DEMAND, INCLUDING HOSE ALLOWANCES: _____ psi _____ gpm
Address <u>1200 W. Bill Bailey Blvd Ogden, UT</u>		_____		
FLOW TEST	Static: <u>82</u> psi	Residual: <u>74</u> psi	Flowing: <u>1220</u> gpm	_____ psi _____ gpm

Pressure psi	Water Flow gpm
120	100
115	200
110	400
105	600
100	800
95	1000
90	1200
85	1400
80	1600
75	1800
70	2000
65	2200
60	2400
55	2600
50	2800
45	3000
40	3200
35	3400
30	3600
25	3800
20	4000
15	4200
10	4400
5	4600
0	4800

☐ Scale A
☒ Scale B
☐ Scale C

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3.0 TOTAL FACILITY BUILDING PROGRAMMING ANALYSIS



NJRA ARCHITECTS
370 East 500 South Suite 101
Salt Lake City, Utah 84111
801.364.9259

Northern Utah State Veterans Nursing Home

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3.1 ARCHITECTURAL PLANNING ISSUES

3.1.1 Building Form and Massing

The requirements for the Utah State Veterans Nursing Home are outlined in the VA Nursing Home Design Guide. The building is intended to be a signature building with a home-like environment on both the interior and the exterior. The new facility shall incorporate less-institutionalized and more home-like qualities. The cultural change concept is to be incorporated into the design of the new facility. The deinstitutionalization of nursing homes is also being championed via the Sage Federation and the Green House Concept which are fragments of culture change.

The VA has a strong preference for single story nursing homes. This building will be designed as a primarily single story building for all areas accessible to the residents. At-grade access to outdoor areas is critical in the functioning of the building and the palliative wellness of the residents. Building support areas such as offices, light storage, linens and supplies and areas not accessible to the residents could be located on an upper floor or mezzanine. In addition to the 120 residents at the facility, there will be 120 Full Time Employee Equivalent (FTE) working at the facility which includes 15 – 20 part time workers and volunteers.

The site may also have a clock tower as a distinctive feature. The clock tower is not a part of this program; however the A/E team will need to coordinate their efforts with the clock tower designer and supplier.

In addition the successful A/E team will need to have an enhanced level of communication with the utility providers Rocky Mountain Power and Questar and their engineers during the design phase of the project. As an energy efficient building, all efforts shall be made by the design team for the building to qualify for LEED EA credits. While the building does not intend to become LEED certified, the design team shall incorporate energy efficiency measures such that the project would potentially qualify for all 3 LEED EA prerequisites and a minimum of 2 ½ LEED EA credits.

The design of the building does not need to include plans for future expansion. Most likely, any future on-site development will be free-standing buildings or residential cottages.

Considerations for the exterior environment need to be factored into the design of the facility. Access to outdoor gardens and strolling paths must be considered early on in the design of the building. The facility will consist of four resident houses with thirty residents in each. One wing of 30 residents will be for special needs individuals and this portion of the building needs to be a secured area with access limited to staff via secured locking devices.

Resident rooms will be either semi-private (sharing a bath), private or isolation rooms. The ratio of semi-private, private and isolation rooms in each residential house will be 14/2/0; 13/2/2; 14/1/1 and 14/1/1 for the specialty resident house. Each residential house will provide sleeping areas and amenities for 30 residents.

Considerations of daylighting suggest that the building be oriented in an east-west direction. Also a courtyard or the exterior landscaped areas will inform the overall massing and design of the building.



3.1.2 External Relationships / Circulation

The Northern Utah State Veterans Nursing Home will be organized to capture the maximum benefit of the spectacular views which the site affords. Healing environments shall be augmented by direct connections from within the facility to the exterior spaces. While maximizing the exterior skin and allowing visual connections to the Wasatch Mountains the challenge that the designer has is how to incorporate a service drive which is significantly separated from the main entrance.

Meandering walkways with a 150 foot loop and a short circuit and strolling paths should be integrated into the design along with interspersed resting areas for the safety and well being of the residents and their guests. Secured exterior areas for the specialty resident house will need to be enclosed with a fenced yard and peripheral landscape spaces to provide safety and security for these residents.

The site will be accessed primarily from the west. Consideration needs to be given for an accessible route from the building's exits to the public way. Special design consideration needs to address the special needs of an aging resident population who may require assistance with mobility.

External relationships may evolve over time. Special healing gardens may include vegetable crops for the residents. Visual connections to the outside from the interior common areas are paramount and must be considered early on in the design process. Residents with a link to the exterior environment tend to experience less pain, fewer complications and better emotional well being.

The design team should research and involve the concepts of the ASLA (American Society of Landscape Architects) with respect to senior living environments. Certain considerations are critical to the success of the design of the outdoor environment. Raised planters and shaded areas shall be provided in the exterior healing gardens. Familiar fixtures such as fountains and benches should be incorporated into the landscape and landmarks for wayfinding are helpful in planning successful garden environments and therapeutic landscapes for the aged population.

Exterior paving shall be carefully considered and brick or stone pavers should be avoided. Non-glare materials with a slip-resistant finish such as colored concrete should be used to prevent disorientation and protect resident safety. Smaller gardens and areas of visual interest should create unique experiences along the pathways of the exterior gardens.



3.1.3 Internal Relationships

The VA Nursing Home Design Guide defines the overall functional layout for the nursing home. The 120 bed nursing home will be comprised of 4 residential houses with thirty residents each. Two residential houses combine to create a residential neighborhood which has unique amenities and common areas. Large common areas shall be designed for interaction among the residents of the facility. Critical to patient care and well-being is the design of the dining areas. This is a place where social interaction occurs among the residents and it is a place where a considerable amount of time may be spent. A single large dining area is planned for the general residents of the facility and a separate secure dining area needs to be planned for the specialty residents.

The internal spaces are broken out into ten areas:

- General Residential House: Resident Areas (3 total w/ 30 residents each)
- Specialty Resident House: Resident Areas (1 total with 30 residents)
- Residential House: Support Areas
- Residential Neighborhood: Patient Areas
- Residential Neighborhood: Support Areas
- Residential Neighborhood: Staff and Administrative Areas
- Therapeutic Areas
- Resident Support Areas
- Staff and Administrative Areas
- Staff Lockers, Lounge and Toilets

Non-programmed areas and space includes structural columns, circulation, partitions, unassigned mechanical areas and any shafts. An efficiency factor of 1.25 was used in determining the estimated area requirements for these spaces. The multiplier of 1.25 is an equivalent efficiency factor to the current Utah State Veterans nursing home facility located at the VA campus in Salt Lake City.

The main public interior spaces include the entry lobby, the chapel / multi-purpose room, the dining areas, common areas such as living rooms and quiet rooms. Other common areas with social interaction include the barber shop / beauty salon and the therapy areas. A mail room for the residents should also be included in the facility as another common area designed to encourage social interaction.

There needs to be a strong relationship between the resident houses and the resident neighborhoods. Also the resident neighborhoods ought to be adjacent to the resident support areas and the therapeutic areas. The dining room can become a social space shared by the residents and their family or friends. Special consideration shall be given to the dining areas and these should be designed to allow flexibility with the potential for sub-divisible intimate dining areas which are more home-like in scale and character.

The resident is first and foremost in the consideration of the design of the facility. Special care should be given toward promoting logical sequences of spaces and developing a way-finding system throughout the building. Long corridors should be avoided. Nursing areas which are close to resident areas should be carefully designed so as to minimize their visual impact in the common areas. The scale and character of the public spaces must be constructed to evoke a home-like feel and a healing environment with natural light and access to views in all public areas.



3.1.4 Building Security

The Northern Utah State Veterans Nursing Home must be designed with respect to the safety and security of all the building occupants. Locating the specialty residents and those who require dementia care at grade is mandatory. Extra consideration needs to be given for the secure area of the specialty residential house. Security for the specialty residents needs to include design mechanisms which provide a safe and comfortable environment. Elopement of residents, especially those with Alzheimer's or mental disease must be considered. Delayed egress systems should be discussed with the owner and the state building official.

Exterior spaces must be directly linked to the common patient areas while secured spaces are designed to prevent residents from wandering away from the facility. The AIA Guidelines for Design and Construction of Health Care Facilities addresses the special needs for dementia units in Section 4.1.3.

Consideration must be given to security cameras throughout the building for the safety of the residents. Security in the nursing home comes in many forms and it may be as simple as a level of trust between the people who work there and the residents. The call light system is critical for the residents and the skilled nursing staff. Also there is a current trend where new technology exists in order to do away with overhead paging in nursing homes. The state of the art technology shall be utilized to help in promoting a home-like environment throughout the facility.

The facility will not include a dedicated office for a security officer. A detailed hardware schedule will be developed in the design phase and it will include the requirements for all doors. Nursing home residents need to operate hardware with a minimum amount of effort. Similarly a window schedule and specification will be developed which will include detailed description and security parameters for the windows throughout the facility.

Hazardous locations shall have controlled access. Prominent locations and high visibility of doors to spaces which residents should not enter shall be avoided.



3.1.5 Codes, Regulations and Safety

Design and Construction Codes are those adopted and in use by the State of Utah. The codes and standards represent a minimum set of requirements. In all cases the most current editions of referenced codes, regulations and safety standards will apply. Also Utah State amendments to the codes shall apply in accordance with the Utah Uniform Building Standard Act Rules (Rule R156-56).

The referenced standards and guidelines are:

- International Building Code (IBC) 2006
- International Plumbing Code (IPC) 2006
- International Mechanical Code (IMC) 2006
- National Electric Code (NEC) 2005
- International Fire Code (IFC) 2006
- International Energy Conservation Code (ECC) 2006
- Life Safety Code (NFPA as applies)
- Laws, Rules and Regulations of the Utah State Fire Marshal
- Planning and Design Criteria to Prevent Architectural Barriers for Aged and Physically Handicapped (Fourth Revision, with lever hardware amendment)
- ADA Accessibility Guidelines 2004
- Division Of Facilities Construction and Management (DFCM) Design Requirements
- Division Of Facilities Construction and Management (DFCM) Design Criteria for Architects and Engineers
- ICC / ANSI A117.1 2003 American National Standard – Accessible and Usable Buildings and Facilities
- American Society of Heating, Refrigeration and Air Conditioning (ASHRAE)
- Sheet Metal and Air Conditioning Contractor National Association (SMACNA)
- Underwriters Laboratories (UL)
- American Society of Testing Materials (ASTM)
- Utah Administrative Code 2005, Health Facility Licensing Construction Rules
- AIA Guidelines for Design and Construction of Hospitals and Health Care Facilities 2006

The above list represents the currently adopted and applicable codes.

Occupancy Classification

The building will most likely be Type 3B construction as identified in the IBC. The occupancy type for this building is Type I-2. All codes and standards are to be met with respect to the design and construction of the facility. The state building official shall be involved during the design in order to determine the occupancy classification and specific code requirements.

Exits

The building will meet the exiting requirements of the IBC with respect to the overall number of exits and the travel distance allowed.

ADA Accessibility

The building and the site shall be designed in accordance with all applicable rules and compliant with the Americans with Disability Act, Title III, 1991 (ADA) and the 2003 ICC / ANSI A117.1 and the IBC. Additional requirements by the Utah State Building Board include:

- All public entries to the building will be ADA compliant with automatic door operators including required vestibule doors.
- One set of accessible restroom doors shall be equipped with automatic door operators.
- ADA compliant parking shall be addressed



NFPA

NFPA 13, 14, 99 & 101 are applicable codes as referenced in the IBC, IFC and ICC.

Furniture and Equipment

Furniture and equipment shall be arranged so as not to limit access to an exit. Furniture shall be located in rooms so as to provide a 66-inch diameter clear area for maneuverability.

City Zoning Ordinances

Local zoning approval is not required for state projects. The site at 1200 West and Bill Bailey Boulevard lies within the M-2 Zone in the City of Ogden. This is identified as a manufacturing and industrial zone. Typically a nursing home of this type needs to be separated by 1000 feet away from other similar group homes.

International Building Code

The A/E design team shall utilize the reference codes applicable to this nursing home facility and specifically the requirements for an I-2 occupancy classification. The applicable standards are referenced in the following sections of the IBC for Institutional I-2 occupancies:

- Accessibility 1107.5.2, 1107.5.3, 1107.5.4
- Combustible decorations 806.1
- Corridor width 1017.2
 - Special Project Note: In accordance with the VA Design Guide, the minimum width of corridors in areas used by residents is 96". Corridors and passageways that are not used by residents may be 44" or wider.
- Exterior exit stair 1023.2
- Fire alarm and detection 907.2.6
- Special Requirements 407
- Sprinklers 903.2.5, 903.3.2
- Suites 1014.2
- Openings in smoke barriers 909.5.2, 709.5



3.1.6 Testing and Inspections

Testing and inspections shall meet the requirements of the International Building Code and as outlined by the Utah State DFCM in the Architect / Engineer Agreement. Typically DFCM will form an agreement with a testing agency and meet the requirements of the IBC. Inspection and Special Inspection requirements shall be in accordance with the provisions of the IBC, IFC, IMC, IPC and NEC. Inspections are defined in IBC Section 109 and Special Inspections are defined in IBC Section 1704. Special inspectors shall be enlisted under the direction of the A/E, and the Owner is responsible for the approval of the extent and the cost for their work.

The architect(s) and engineers shall make periodic observations in accordance with the A/E agreement with DFCM. The contractor will be responsible for scheduling inspections and special inspections as required to be in compliance with the referenced codes.

Costs for the A/E normal observation duties are a part of the A/E agreement with DFCM. Costs for other inspections and special inspections are to be paid for by the owner and they are not part of the construction contract sum. The costs for retesting deficient work shall be paid for by the contractor until the work has been shown to be in compliance with the documents for construction. All discrepancies shall be brought to the attention of the Owner and a written report shall be prepared for all work observed.

The contractor shall be responsible for calling requests for inspections. Inspections shall be scheduled and coordinated with the project activities without delay in the progress of the project. The contractor is responsible for scheduling the inspections, taking samples and other observations and inspections. The inspections shall be performed in such a manner that a minimal amount of the removal of work in place must occur.

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3.2 SPACE PLANNING ISSUES

3.2.1 Neighborhood Concept and Culture Change

The culture change concept in nursing homes is a conscientious effort by care-givers to create environments which are more home-like and less institutional than earlier models of the nursing home. There are four major domains which comprise the culture change concept:

- Environment
- Organizational Procedures
- Resident Involvement
- Staff Empowerment

The Sage Federation (www.sagefederation.org) has a similar philosophical approach to the care of residents in nursing home facilities. The Sage design principles may be implemented in the design of the new Northern Utah State Nursing Home. SAGE holds these values related to gerontological environments:

- **Physical safety and psychological security:** Provide appropriate safe guards and enhance perception of security.
- **Environment as a therapeutic resource:** Utilize all aspects of the environment (physical, programmatic and organizational) as a resource for healing and improved functioning.
- **Holism and well-being:** Focus on needs and desires of the whole person social, emotional, spiritual and physical, vocational and intellectual.
- **Individual rights and personal autonomy:** Maximize available choices, opportunities for self determination, and accessibility of options.
- **Communities and relationships:** Generate opportunities for meaningful interactions and relationships among peers, families and staff.
- **Support of caregivers:** Create an environment that promotes safety, efficiency, and emotional support.
- **Function enhancing technology:** Harness new technology to increase functionality of the environment.
- **Creating and evaluating:** Encourage innovation, diversity of approaches, experimentation with new solutions, and systematic evaluation of outcomes.

An informed design for the nursing facility must take into account all of these aspects in order to create a building which functions in the best interest of the residents. Culture change is a foundational philosophy that seeks to improve the quality of life for the residents and for the staff who serve them. The nursing home then is a special place where people *want* to live rather than a place to merely die. It is also a place where the staff *wants* to work rather than a place where they have to work.

The model of care within the culture change concept is one which puts emphasis on the community. There are a few factors in the design of the building which deserve special attention in order to implement this concept. The primary difference in a nursing home which has embraced this philosophy is placing the person before the tasks.

A model vocabulary has redefined some of the functions within nursing home buildings. The term wing or unit is a community area known as a neighborhood, a household, a street or an avenue. The lobby or the common area can be known as the living room, the parlor or the foyer in this model. The cafeteria in this facility should be known as the dining services as this is one of the key areas for personal interaction in the facility.

The design of the building should provide as much privacy for the residents and semi-private and single occupancy bedrooms are desired throughout. The ability to do this depends largely on capital, physical size and governing regulations. The bathing experience for the residents needs to also be considered very carefully in the facility's design. While the goal of bathing is good hygiene, the culture change model also recognizes the therapeutic



Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

effect to restore the body and the spirit. Some of the physical elements for this include decorating bathing rooms to be more homelike. In order to implement these features in the design it is critical that the A/E team utilizes an interior designer with expertise in senior care.

Culture change also involves redefining the common dining areas for the residents. The philosophy attempts to return the idea of food enjoyment to the dining experience with different types of food service. The dining area must be designed as a home-like setting and not over powerful in scale. The design of the facility should consider using family dining and / or home style dining. It is desirable to have the dining area connected to an outdoor patio area which can be used for dining in fair weather. Consideration for flexibility and the creation of different dining experiences needs to be explored; again the A/E team should enlist an interior designer with experience in senior care.

Another aspect of the healing environment is the integration of natural daylight and access to views in the facility. All common areas shall be designed to incorporate natural light and access to views wherever practical. It is also important for the staff to have daylight in work areas wherever practical. The kitchen area shall incorporate the use of skylights and at least one window with a view to the exterior.

Other aspects of culture change which will be incorporated into the design are the need for residents to have other social communal outlets. The design shall include the coordination for other aspects of communal life. Gardening has been a very popular trend in senior care and the design needs to include outdoor areas where residents can get involved with the physical environment in a hands-on manner. Within the common areas there shall be provisions for the integration of animals in the common areas. This includes amenities such as fish aquariums and bird cages to foster a more home-like environment. More homes are also bringing pets into their environments as a normal procedure. The benefits of animals include reducing stress and living longer lives. The introduction of pets should be strongly considered in the design.

The design for the facility shall also consider long travel distances and minimizing sight lines. This is achieved by breaking down long corridors into smaller neighborhoods. The nurses' stations shall be designed to be non-medical in nature which blends in to the home-like feel of the environment. The art in the facility should also be home-like in nature and reflect the values of the residents' culture and tastes. Lighting, furniture and the overall environment in the facility should reflect something similar to what is used in a residential setting. It is important that the resident rooms are personalized and each resident room shall have operable vision windows to the exterior and a window to the common hall. Window treatments such as louver shades and curtains shall be included in the cost of construction.

The personalization of common areas also can create a more home-like and less institutional environment. Painted hallways can mimic scenes from streets and neighborhoods. The wall protection can be more residential than that which is typically found in hospitals. The concept intends to do away with the clinical demeanor of the facility. Different neighborhoods throughout the facility may have unique names and design schemes so that residents can easily identify where they live. Equipment costs not included in the costs for construction shall not exceed 10% of the costs for construction (hard costs) in accordance with Federal Rule. The A/E team will coordinate the FF & E budget with the owner as a part of the program.

Each residential neighborhood will consist of the areas identified in the space planning area requirements in the following section. Included in the requirements for the residential neighborhood is a kitchenette area and pantry where residents can provide themselves with nourishment 24 hours a day.

The facility will also house a large combined chapel / recreation area / multipurpose room for group gatherings and meetings. This space may be used for educational purposes, movies, music recitals or any other functions in a range of group activities for the residents.



3.2.2 Space Planning Areas

The space planning areas have been determined via the VA design guide for nursing homes and the Space and Equipment Planning System (SEPS) criteria. The numbers represent the amount and square footage of the areas within the facility.

The planning areas for this project are categorized in the following ten groups:

- General Residential House: Resident Areas (3 total w/ 30 residents each)
- Specialty Resident House: Resident Areas (1 total with 30 residents)
- Residential House: Support Areas
- Residential Neighborhood: Patient Areas
- Residential Neighborhood: Support Areas
- Residential Neighborhood: Staff and Administrative Areas
- Therapeutic Areas
- Resident Support Areas
- Staff and Administrative Areas
- Staff Lockers, Lounge and Toilets

Refer to the following pages for the Space Planning Area Summary.

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Project Name: Department of Veterans Affairs Northern Utah State Veterans Nursing Home
DFCM Project #: 8078490
Date: 8-Aug-08

Space Planning Area Requirements

A1	Residential House, General, 15 Residents	90 total	6 general resident houses	3 wings
A2	Residential House, Specialty, 15 Residents	30 total	2 specialty resident houses	1 wing
A3	Not Used			
A4	Residential Neighborhood, General and Combined		2 residential neighborhoods	

Room Name		Room Area (NSF)	x factor	Ogden VA Program Area
B General Residential House: Resident Areas				
B1	Bedroom + Bath, Resident (BRNP1) - Semi-Private, 2-Resident	480	41	19680
B2	Bedroom + Bath, Resident - Private, 1-Resident	315	5	1575
B3	Bedroom + Bath, Resident - Bariatric - Private, 1-Resident	340	3	1020
B4	Not Used			
B5	Vestibule (LOB02)	50	3	150
B6	Living Room (DAYR1)	420	6	2520
B7	Quiet Room (RAMR1)	120	6	720
B8	Dining Room (FSCD1)			0
B9	Kitchen & Servery (IPK01)	175	3	525
B10	Pantry (SRS01)	90	3	270
B11	Toilet, Resident / Visitor (TLTU1)	50	6	300
B12	Laundry (NURL1)	100	0	0
				26760
C Specialty Residential House: Resident Areas				
C1	Bedroom + Bath, Resident (BRNP1) - Semi-Private, 2-Resident	480	14	6720
C2	Bedroom + Bath, Resident - Private, 1-Resident	315	1	315
C3	Bedroom + Bath, Resident - Bariatric - Private, 1-Resident	340	1	340
C4	Not Used			
C5	Vestibule (LOB02)	50	1	50
C6	Living Room (DAYR1)	460	2	920
C7	Quiet Room (RAMR1)	120	2	240
C8	Dining Room (FSCD1)	960	1	960
C9	Kitchen & Servery (IPK01)	175	1	175

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C10	Pantry (SRS01)	90	1	90
C11	Toilet, Resident / Visitor (TLTU1)	50	2	100
C12	Laundry (NURL1)	100	0	0
				9910
D1 - D12 NOT USED - Combined Residential House: Resident Areas				
E Residential House (General, Specialty or Combined): Support Areas				
E1	House Care / Workstation (NSTA3)	60	4	240
E2	Storage, Clean Linen (LCCL1)	25	4	100
E3	Storage, Soiled Carts (LCSL1)	25	4	100
E4	Storage, Equipment (SRE01)	120	4	480
E5	Storage, Medical Supplies (SRSE1)	120	4	480
E6	Housekeeping Aides Closet - HAC (JANC1)	60	4	240
				1640
F Residential Neighborhood: Patient Areas				
F1	Activity (DAYR1)	600	1	600
F2	Bathing Suite (TLTS2)	375	2	750
				1350
G Residential Neighborhood: Support Areas				
G1	Neighborhood Care (Nursing) Station (NSTA1)	250	2	500
G2	Exam Room (EXRG3)	120	0	0
G3	Medication Room (MEDP1)	100	0	0
G4-G6	NOT USED			
G7	Utility Room, Clean (UCCL1)	120	2	240
G8	Utility Room, Soiled (USCL1)	100	2	200
G9	Housekeeping Aides Closet - HAC (JANC1)	50	2	100
G10	Storage, Stretcher / Wheelchair	60	2	120
				1160
H Residential Neighborhood: Staff and Administrative Areas				
H1	Office, Activities Coordinator (OFDC1) - Adjacent to F1	120	1	120
H2	Office, Nurse Supervisor (OFD03)	120	0	0
H3	Conference/ Classroom	240	0	0
H4	Toilet, Staff (TLTU1)	50	2	100
				220
I Therapeutic Areas				
I1	Physical Therapy (PTEA1)	400	1	600
I2	Occupational Therapy (OTDL1)	300	1	400
I3	Office, Therapist (OFD03)	120	1	120
I4	Medications Room (MEDP1) - Adjacent to Central Nurse Station	160	1	160
I5	Toilet, Resident (TLTU1)	50	1	50
I6	Medical Director	140	0	0
				1330

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J Resident Support Areas				
J1	Chapel / Multipurpose Room(RAMR1)	3300	1	3300
J2	Barber / Beauty Salon (XXYYC)	170	1	170
J3	Laundry (LCCL1)	600	1	600
J4	Housekeeping (XXYYC)	200	1	200
J5	Maintenance / Engineering Shop (PMCC1) (w/ security CCTV)	900	1	900
J6	Receiving / Loading (MMRP1)	150	1	150
J7	Storage, Bulk (SRE01)	100	1	100
J8	Food Preparation (FSNP1)	3130	1	3130
J9	Storage, Resident (SRPB1)	250	1	250
J10	Dining Room	2000	1	2000
J11	Library	150	1	150
J12	Mail Room	120	1	120
J13	Maintenance Manager's Office - Adjacent to Shop	120	1	120
				11190
K Staff and Administrative Areas				
K1	Lobby (LOB01)	360	1	360
K2	Toilet, Visitor / Resident (TLTU1)	150	2	300
K3	Toilet, Staff (TLTU1)	100	2	200
K3	Office, Service Chief (Administrator's Office) (OFC01)	200	1	200
K4	Office, Administration (Assistant Administrator) (OFA01 / OFA02)	150	0	0
K5	Office, Physician (OFD03)	150	1	150
K6	Conference Room (CRA01)	500	1	500
K7	Medical Records / QA (MRS01)	150	1	150
K8	Copy Room (RPR01)	100	1	100
K9	Cubicle, Clerical (OFA03)	80	6	480
K10	Reception / Information	120	1	120
K11	Nurses' Office & Dictation Area	120	1	120
K12	Billing & Accounts Receivable	120	1	120
K13	Volunteer Director's Office	120	0	0
K15	Administration Interview & Consultation	120	0	0
K16	Office Manager's Office	120	0	0
K17	Service Officer's Office	120	1	120
K18	State Officer's Office	120	1	120
K19	State Offices	120	3	360
				3400
L Staff Lockers, Lounge and Toilets				
L1	Lounge, Staff (SL001)	160	1	160
L2	Locker Room, Staff (LR001)			0
L3	Toilet, Staff (TLTU1)	50	2	100
				260

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SUBTOTAL (NSF)	57220
EFFICIENCY FACTOR	1.25
Program AREA (GSF)	71525

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3.2.3 Space Type Narrative

Section Two of the VA Nursing Home Design Guide provides detailed descriptions of the general considerations for the unique functional spaces in the building. This information is provided in the appendix at the end of the program. A brief synopsis directly excerpted from the VA Design Guide identifies the following functional considerations.

1.2 Functional Considerations

1.2.1 Operations: Services

The Nursing Home is divided into the following functional areas:

1. *Resident Care Units* are organized into four sub-areas including bedrooms for the resident rooms and adjoining toilet/shower rooms, staff areas required to provide clinical support to operate the resident unit, resident areas for activities and dining, and unit support for utility, office and miscellaneous functions used to assist staff in managing resident units.
2. *Therapeutic Services* offer space adjacent to resident care units for the therapies such as physical therapy, occupational therapy and pharmacy.
3. *Resident Support Services* provide for the resident amenities and social services such as chapel/meditation, barber/beauty shop, and resident storage.
4. *Administrative Services* provide a variety of management and public functions: admissions/registration, lobby, medical records, and management offices.
5. *Logistical Services* provide for the supply needs of the facility and include receiving/loading, bulk stores, laundry and food preparation. The level of services provided depends on the building systems and the availability of contract services or those available from a host organization such as a medical center.
6. *Environmental and Maintenance Services* provide for the upkeep and protection of the facility and include housekeeping, maintenance/engineering and security. The level of services provided depends on systems and the availability of contract services or those available from a host organization.

1.2.2 Operations: Concepts

The Nursing Home is organized around the following concepts:

1. *Resident Care* should be provided in spaces that are flexible enough to accommodate changing resident care needs. The spaces represented in the guide plates provide flexibility for future changes. Resident care areas and other areas where staff interact with residents may require additional acoustical treatment to reinforce resident privacy.
2. *Level of Care* may vary in terms of levels of impairment and skilled care needs. Specific rooms and their interior design need to be coordinated with the expected level of care to be delivered. The size of resident units and individual spaces need to reflect level of care.
3. *Market Sensitivity* should be considered in the delivery of Nursing Home care services. In terms of amenities and service, Nursing Home facilities used by veterans need to be designed comparatively with private sector facilities and programs. Nursing Home facilities need to be user friendly for both the veteran and his or her family and staff.
4. *New Concepts* in the delivery of Nursing Home care should be considered. These include naming units or sub-units thematically instead of alphanumeric designations, eliminating and/or decentralizing nursing stations, and creating bright and inviting country kitchens for dining and socialization.

1.2.3 Space Planning and Design

1. Flexibility

The design of Nursing Home facilities needs to respond to changing workloads, care objectives, and technologies such as wireless technologies for staff.



- Spaces should be universally designed to accommodate a range of related functions.
- Generic plans should be developed to respond to changes in use and assignment.
- Special spaces need to be designed and grouped to accommodate a range of functions and to accommodate change if possible.

2. Efficiency

The design of Nursing Home facilities should provide resources to accommodate increasing health care demands.

- Support spaces, such as storage and utility rooms, should be designed to be shared where possible to reduce the overall need for space.
- Functions with requirements, such as facility supply and transport areas, should be grouped or combined to achieve efficiency of operation.
- Duplication of facilities should be minimized where limited resources are available.

3. User Needs

Resident dignity and respect for individuality should be accommodated while considering operational realities. Resident vulnerability to stress from noise, lack of privacy, poor or inadequate lighting and other causes, and the subsequent harmful effect on well being, are known and documented phenomena. An inherent opportunity exists in the design of Nursing Home facilities to address the above issues and to offer creative solutions to enhance resident comfort and contribute to positive outcomes.

A key architectural objective should be to reduce emphasis on the institutional aspects of care and to surround the resident and family with furniture, furnishings and fixtures that are more homelike, i.e., residential and comfortable. Proper planning and design appeal to the spirit and sensibilities of both residents and care providers. A spirit of neighborhood or household should be encouraged.

Nursing Home facilities need to be environments of healing that allow the building itself to be part of the therapeutic setting. The technical requirements to operate the building should be unobtrusive and integrated in a manner to support this concept.

Sufficient space should be allocated for equipment and supplies to avoid storing or parking of medical equipment including medication carts and assistive devices in public view, in corridors, or in showers. Resident privacy needs to be provided while encouraging socialization and other group activities. Security, both from a resident and a facility perspective, needs to be addressed by planning, design and detail considerations. Access needs to be provided by application of UFAS (not yet adopted by the Department of Justice) and ADA design standards to room and fixed equipment layouts. Most Nursing Home resident units need to be located at grade. For some specialty programs, such as dementia care, location at grade is mandatory.

1.2.4 Functional Relationships

1. Work Flow

The Functional Diagram reflects the function, organization of spaces, flow of residents/staff/materials, and operational issues. (See figure 14). These relationships should not be interpreted as preconceived or prescribed layouts.

2. Organizational Concepts

Where possible, facility planning and design should follow a modular concept to promote flexibility, encourage construction efficiencies, and promote staff orientation.

3. Space Allocation Net square footage requirements discussed and shown in guide plates are intended to be consistent with revisions to space planning criteria. Refer to Section 2.5 Guideplates, Reflected Ceiling Plans and Data Sheets.



3.3 BUILDING DESIGN CRITERIA

3.3.1 Architectural Criteria

Architectural Character

The Northern Utah State Veterans Nursing Home exterior and interior aesthetic character must convey a highly attractively designed facility which is evocative of home-like residential environments in both scale and its sense of look and feel. The design of the facility must first and foremost take into consideration the residents. The building shall be designed to create an environment which is conducive to quality living in order to promote well-being and focus on the health of the residents. The design must incorporate residential décor, natural light and access to nature. The design of the building may incorporate the concepts of culture change and the neighborhood concept. The environment of the nursing home shall be welcoming and friendly to evoke a sense of place where veterans will want to spend their time rehabilitating or spending the last years of their lives.

The significance of natural light in this facility can not be overstated. The building's architectural elements shall consider sympathetic strategies for the admission of daylighting into the facility which shall be modulated appropriately for the level of contact with the natural environment. Elements to consider in the use of daylight include aesthetics, psychological response, health, energy / cost, percentage of window area, percentage of wall area, placement of window and orientation. The design of the building must also consider the effective use of artificial light which will enhance the day and night time experiences of the residents and the staff.

Views to the exterior of the building shall be considered in the design process in order to create a building which emulates the concept of culture change and evokes a dignified character. The correlation of the building's interior spaces to the site and circulation organization shall be designed to promote a clear sense of perception for the residents of where they are in order to enhance way finding and orientation within the building. Common areas and neighborhood spaces could be arranged to provide nodes around which the building is organized. The inclusion of one or more atrium spaces should be included in the project. Varying ceiling heights and overhead design elements could be used as strategic design idioms which inform the circulation pathways.

A strong sense of cohesion throughout the facility shall be implemented in order to avoid spaces and space arrangements which are disorienting in their nature. A sense of order shall be achieved through the appropriate design of spaces with a logical sequence. The interior materials of the facility shall also be used to assist the residents in their way finding and orientation in the building. Durable materials should be chosen with the appropriate color, texture and scale to create a high quality environment with a residential character.



Sustainability

The DFCM and the building user are strongly encouraging the design of a nursing home which demonstrates the efficient use of material resources and has a diminished reliance on energy use. The VA and the DFCM have required that energy incentive programs from Rocky Mountain Power and Questar are included as a part of this program. The building systems / design performance shall meet the requirements for state funded buildings. Beyond that the design of the systems shall meet the requirements for the three LEED (Leadership in Energy and Environmental Design) Energy and Atmosphere (EA) prerequisite credits and at least 2 ½ EA points. The United States Green Building Council (USGBC) lists the point rating system for EA as follows:

Prereq 1	Fundamental Commissioning of the Building Energy Systems
Prereq 2	Minimum Energy Performance
Prereq 3	Fundamental Refrigerant management
Credit 1	Optimize Energy Performance (1-10 points)
Credit 2	On-Site Renewable Energy (1-3 points)
Credit 3	Enhanced Commissioning (1 point)
Credit 4	Enhanced Refrigeration Management (1 point)
Credit 5	Measurement & Verification (1 point)
Credit 6	Green Power (1 point)

The design of the building systems shall consider that the building's life cycle costs will be minimized to the greatest extent possible within the parameters of this program. The architectural, structural, mechanical, plumbing, electrical and voice and data systems shall be designed to meet the inherent needs of the facility without excess capacity and within the limits of the construction cost budget. Durable materials shall be used so that they are easily maintained and subject to a reasonable level of use and abuse. The commissioning of the building systems will be provided by DFCM and is not to be considered as a part of the construction cost. See **Section 3.3.9 Sustainable Design / Energy Efficiency** for more detailed information for this project. The design team is encouraged to explore the possibilities of wind power and solar power for this project. The results of their findings shall be discussed with the Owner early in the design process.

Site

The site for this project is currently an unoccupied meadow which consists of 13.45 acres of native grasses and vegetation. The site and the building shall be oriented in a manner which provides a public face to the adjacent roadways. Consideration shall be given to the site access and drive approach to the building as a transition to a healing place. The design for the sitework should include 15 percent of the total site area as a minimum to feature landscaped and irrigated areas. The A/E team could consider an enfildade of Oak trees or some other significant and hardy vegetation to line the entry to the site in order to heighten the experience of arrival.

Miscellaneous Architectural Information

Daylighting is a primary concern for the overall well-being of the residents and staff and shall be addressed as one of the primary aspects of the design. Interior finishes and spaces shall flow throughout the facility in logical sequences which aid in way finding and orientation within the building. Ceiling finishes and differing heights in public spaces and common areas can also be used to aid in the residents' orientation. Recommended minimum ceiling heights for the facility are 9'-0" for the residents' rooms; 9'-0" for the corridors; 10'-0" for activity areas; 10'-0" for the dining areas; and 8'-0" for resident toilet / shower areas. Soffits in common areas should be considered as part of the design to enhance both natural and artificial light. In keeping with the common goal to present a healing, comfortable environment for the resident, painted gypsum board ceilings are recommended.

Way finding for the project shall be aided with the use of signage. In a nursing home the concept of orientation and way finding is of increased importance. Attractive signage with high contrasting notation is required. The signage is a part of the construction costs and is included as part of the building program.



Color coding bedrooms and common areas is also a useful tool which the A/E design team should consider. It is important that an interior designer with experience in nursing homes is included as part of the design team. The designer needs to consider the effects of hue, value, saturation and brightness in the color schemes for the facility. Lighting fixture selection is also a useful tool for the designer to use as an aid to resident navigation and orientation. Different lighting types shall be used to distinguish various areas and spatial relationships. The design shall carefully consider the different effects of chandeliers, pendants, sconces and table and floor lamps as well as combinations of different fixtures. Careful consideration and coordination effort shall be given to the relationship between color temperature of artificial illumination and color and texture selection for finishes. Refer to the VA Nursing Home Design Guide Technical Criteria for additional information.

The building design will also include a dumpster enclosure located adjacent to the exterior service yard and the kitchen servery loading dock areas to the extent most practical. An exterior area in relative proximity would also be a logical location for a pad-mounted emergency generator and the main electrical service gear.

Floor Finishes

The consideration of floor finish selection is critical to the success of a nursing home project. The residents in the facility may be ambulatory only with the assistance of mobility devices. The flooring must be readily cleanable and appropriate for their locations. Flooring for food services areas must be water-resistant and resistant to food acids. There is a preference for quarry tile in these locations because of the durability and quarry tile has a distinct advantage over epoxy or terrazzo floor systems in its ability to easily repair any damage to the floor finish.

Floors that are subject to frequent wet cleaning shall be selected so that they are not adversely affected by germicidal cleaning solutions. Floors that are subject to traffic when they are wet such as in bathing and shower areas shall be selected with a slip-resistant finish.

Slippery floor surfaces, area rugs and changes in floor materials without tapers shall be avoided in the selection of flooring materials. Consideration should be given to residents with visual impairment and glossy flooring can affect an individual's depth perception which can create an unwanted fall hazard. It is also important to note that slab-on-grade construction and concrete subflooring creates more injuries from falls than wood-framed construction over a crawl space.

Carpeting density and classification ratings shall be considered in the selection of carpeting and the transitions. The VA Nursing Home Design Guide has additional information on floor finishes. Their data indicates a preference for Class II (Heavy) carpet traffic classification for use in the resident rooms and Class III (Extra Heavy) carpet traffic classification for use in the staff station and corridors. The VA guidelines list the following as the top ten specified flooring materials in the healthcare industry:

- Vinyl Composition Tile (VCT)
- Sheet Vinyl
- Broadloom Carpet
- Vinyl-backed Carpet
- Ceramic Tile
- Carpet Tile
- Vinyl Plank Flooring
- Linoleum
- Rubber Flooring
- Poured Flooring

Sealed concrete (sodium silicate or equal) should be used in mechanical rooms and unoccupied areas which are not frequently used. Sealed concrete (2-component epoxy or equal) should be used in food storage areas where required by health department and food services requirements.



Wall Finishes

In nursing homes the walls are often used as a method of support and guidance. Corridors shall be equipped with protective devices which function to protect the walls from impact damage at the floor level and at the handrail level. An integrated handrail and wall protection device should be considered. There are several finishes for wall protection which should be considered in order to stray from a hospital-like institutional setting and to promote well-being for the residents by offering a home-like setting.

Where walls are to be painted in the facility water-based paint should be considered because it has less off-gassing than latex-based paint and it improves the indoor air quality (IAQ) in the building. Formaldehyde-based materials shall be avoided. Type II vinyl wall coverings can be selected for common areas and should be chosen with consideration given to their aesthetics, durability and infection control.

Where wall coverings are adjacent to plumbing fixtures they shall be smooth and moisture resistant. Ceramic tile shall be considered by the designer for the restrooms and kitchen areas. The construction of the kitchen area walls shall be free of rodent- and insect-harboring spaces. All floor and wall penetrations for pipes, ducts, structural elements and conduit shall be sealed to prevent the intrusion of fire and smoke and to minimize the entry of pests. Wall bases shall be designed to accommodate routine wet cleaning in areas subject to moisture.

Generally, the walls will be constructed of type 'X' gypsum board over metal stud framing. Sound batt insulation shall be provided between patient rooms and at any noise-producing areas to create calming spaces and reduce the nuisance of airborne sounds. Full height partitions which extend to the roof structure shall be provided at conference rooms, mechanical rooms and offices to minimize the sound transmission between adjacent spaces. Spaces shall be designed to minimize resident privacy issues. The following VA design criteria for noise (Maximum NC Level) shall be included in the design for the facility:

- Bedrooms 35
- Bathrooms & Toilet Rooms 40
- Dining 45
- Offices, Lobbies, Waiting Areas 35

Unit masonry or poured concrete may be used in occupied spaces due to design constraints and they shall be designed with architectural integrated color surfaces or furred with metal studs and gypsum board. Where masonry or poured concrete walls occur at mechanical areas and spaces not normally occupied, they can be left unfinished or painted.

Window Coverings

Exterior windows shall be equipped with louver blinds or perforated roller shades for solar glare and heat control. Louver blinds can be either vertically or horizontally oriented and the designer should consider the building and room orientation when selecting louvers for their orientation, color and depth. Louvers and window shutters can provide indirect reflected light while simultaneously reducing or eliminating glare and enhancing the residential qualities of a space.

The chapel area / multi purpose hall shall be equipped with pre-engineered blackout shades with a fabric shade cloth. Curtains and other residential type window treatment shall be installed in the resident bedrooms. Curtains should also be considered for use in common areas such as the chapel, dining areas, living rooms and quiet rooms. Draperies shall be non-combustible or flame retardant as prescribed in both the large- and small-scale tests in NFPA 701.



Doors and Hardware

The VA recommendations for resident bedrooms and bathrooms are 4'-0" wide doorways. The Northern Utah State Veterans Nursing Home may be designed with narrower door widths of 44-inches at most residents' rooms and 36-inch width at most residents' bathrooms. A minimum of 20% of resident rooms shall be 4'-0" wide at bedrooms and 3'-8" wide at restrooms and distributed equally throughout the resident houses. Automatic door openers are to be used at major building entries. The design of the special care residents' rooms should consider the use of automatic door openers. All doors shall provide a minimum height of 7-feet. Doors to bathrooms in the residents' rooms shall swing out or be double-acting type with rescue hardware and a cased opening.

Doors shall be 1 $\frac{3}{4}$ " thick solid-core, flush-panel, stile and rail or hollow metal doors in hollow metal frames. Doors in locations where impact resistance is a concern or where fire-rating is required should be hollow metal doors in hollow metal frames. The design should consider the use of residential trim detailing in conjunction with the hollow metal frames to evoke a residential quality.

The loading dock area shall be equipped with a motorized, insulated overhead or sectional door with vision panels. Dock bumpers shall be provided and the truck dock height shall be verified with the Owner and coordinated with the civil engineer. An accessible man-door entry shall also be provided at the truck delivery area.

Hollow cored veneered doors, fiberglass doors and fiberglass frames are not allowed.

All hardware provided shall be accessible and usable by persons with disabilities. Various levels of key access should be provided and the use of interchangeable core locksets is encouraged. Card reader access shall be provided for secure areas in the facility including the secure specialty residential house. Doors should be operable with a simple single effort and the ease of use for the residents needs to be considered. It is good practice to use a continuous piano-type hinge wherever practical in healthcare environments. Doors in isolation rooms (the larger private rooms) shall be equipped with hospital style hinges.

See the electrical section below for specific entry and egress security requirements at exterior doors.



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3.3.2 Structural Criteria

Code

All portions of the project comply with the code. The code referred to herein consists of all applicable local, State, and federal regulations as well as non-regulatory criteria documents, including but not limited to those listed below. In the event of conflict, comply with the more stringent requirement.

1. Federal

- Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines, July 23, 2004 issued by the United States Access Board.
- ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities.
- 29 CFR 1910; 1997, Occupational Safety and Health Standards, as a work place.

2. State

- Utah Uniform Building Standard Act
- Utah Uniform Building Standard Act Rules
- 2006 International Building Code, International Code Council

Non-Regulatory Criteria Documents

In addition to specific regulatory requirements, the following documents are also incorporated into the definition of “the code” for the purposes of this project, except for administrative provisions contained therein; where referenced, the role of the code official described in the document will be performed by Owner.

1. Federal

- Department of Veterans Affairs: Design Guide, Nursing Home 2006
- Department of Veterans Affairs: Structural Design Manual for Hospital Projects, June 2006
- Department of Veterans Affairs: VHA Handbook H-18-8, VA Seismic Design Requirements,
- Department of Veterans Affairs: Natural Disasters, Non-structural Resistive Design, September 2002.

2. State

- Design Manual, Utah Department of Facilities and Construction Management, March 15, 2006

Structural Overview

1. Design Loads: Comply with load and design requirements of the Utah Uniform Building Standards Act.
2. General: Building Importance Category: III
3. Gravity Loads:
 1. Dead Loads: Weight of construction.
 2. Collateral Hung Mechanical and Electrical Dead Load: 10 PSF Min.
 - a. Where concentrations of mechanical, electrical, or plumbing equipment exceed 10 PSF, design for the greater load in the applicable area.
 - b. Coordinate floor-mounted, wall-mounted, or hung concentrated loads and locations (i.e. piping, ductwork, equipment, hoists, etc.).
 3. Ceiling Construction Dead Load: 10 PSF Min.
 4. Self weight allowances for applicable materials and systems shall not be less than ASCE 7 Table C3-1
4. Snow Loads:
 1. Ground Snow Load (Pg): 43 PSF
 2. Importance Factor (I): 1.10
 3. Exposure Category: C
 4. Exposure Factor (Ce): 1.0
 5. Thermal Factor (Ct) to be determined from ASCE 7-05 Table 7-3



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5. Wind Loads:
 1. Basic Wind Speed (V): 90 mph
 2. Exposure Category: C
 3. Importance Factor (I): 1.15
 4. Topography Factor (Kzt): 1.0
 5. Directionality Factor: To be determined by the Engineer
6. Seismic Loads:
 1. Seismic Use Group: III
 2. Site Soil Classification: E
 3. Importance Factor (I): 1.25
 4. Peak Ground Acceleration (PGA): 0.578
 5. Short Period Design Acceleration (SS): 1.446
 6. One Second Period Design Acceleration (S1): 0.613
 7. Long Period Transition Period (TL): 8 sec
 8. Seismic Design Category: To be determined by the Engineer
7. Deflection Limits: Engineer structure to withstand design loads with deflections no greater than the following:
 1. Wind Loads:
 - a. Overall building drifts: 1/500 of the building height.
 - b. Out-of-plane elements supporting masonry veneer: 1/600 of the story height
 2. Seismic Loads: Deflection limits per the IBC. See requirements in the Super Structure section.
 3. Gravity loads: Deflection limits per the IBC
8. Sub-Structure

Soils below the structure consist of mixed over-consolidated clays and sand layers. Preliminary geotechnical investigation has discovered water as near as 4.4 feet from the surface. Foundation recommendations state shallow foundations may be placed on appropriate native soils with anticipated settlements to be 1/2" to 5/8". Localized soft soils may need to be over-excavated and replaced. Allowable bearing pressures should be limited to 2,500 PSF. Short term bearing pressures may be increased up to 50%.

Because of the high water table, liquefaction during a seismic design event is possible. Preliminary geotechnical recommendations state lateral spread is not likely and differential settlement of up to 1" is possible during the seismic event. Final superstructure selection should review the impacts of potential liquefaction movement. Foundations shall be tied together and be able to support a minimum horizontal forces equal to the applied footing load multiplied by S_{DS} and divided by 10.
9. Super-Structure

Super structure will consist of a one-story steel frame. Roof structure will be essentially flat with a minimum slope to allow for drainage. Slope may be attained through tapered insulation or sloping the structure. Under the roofing system, the metal roof deck shall be support on steel bar joists. Bar joists may be supported by joist girders or rolled steel shapes. The horizontal structural system shall be supported on steel columns.

Lateral systems shall be selected based on economy of the project and deflections shall be compatible with the selected building envelope. The lateral system shall be constructed from steel elements. Where masonry veneer is used, the veneer shall be horizontally isolated from backing and allow for the maximum inelastic seismic drift in the plane of the veneer. If the veneer must be tied to the frame, maximum inelastic in-plane drift shall be limited to 0.007 times the veneer height.



3.3.3 Mechanical Criteria

SPECIFIC REQUIREMENTS

- DFCM Design Manual (<http://dfcm.utah.gov/>)
 - US Department of Veterans Affairs, Office of Construction & Facilities Management – TIL (Standards) Nursing Home Design Guide (<http://www.va.gov/facmgt/standard/nursinghome.asp>)
- Note: These DFCM requirements are specific and comprehensive. The project will be designed and constructed in strict compliance with the above standards.

CODES

- International Building Code, 2006
- International Mechanical Code, 2006
- International Plumbing Code, 2006
- International Fire Code, 2006
- International Energy Conservation Code, 2006
- NFPA 13 & 14
- NFPA 99
- Utah State Boiler Code

STANDARDS

- ASHRAE Guidelines and Standards
- SMACNA Standards

BUILDING PERFORMANCE REQUIREMENTS

- Fundamental Building Systems Commissioning. DFCM will engage a Commissioning Agent that is not an individual directly responsible for project design or employed by one of the designers. Commissioning Agent shall ensure that fundamental building components are installed and calibrated to operate as intended.
- Building Envelope Performance: The building envelope shall be designed to reduce the envelope performance factor by 10 percent or more to what is required by ASHRAE Standard 90.1 and verified by the use of DOE Comcheck software.
- Mechanical systems in addition to meeting the requirements of ASHRAE standard 90.1, shall be designed to obtain a minimum of 2 ½ EA LEED points for Credit 1 in terms of energy reduction. A DOE 2 building simulation program will be used to verify points.
- DFCM has entered an agreement with Rocky Mountain Power for incentive savings using the FinAnswer program. Rocky Mountain Power will engage an independent Energy Specialist with a minimum of 3 years experience with hourly energy modeling. The Energy Specialist shall perform the energy analysis according to ASHRAE 90.1-2004 Appendix G. The Energy Specialist will in addition to performing the energy analysis for incentive savings, will verify the 2 ½ EA LEED points have been achieved.
- CFC Reduction in HVAC and Refrigeration Equipment. Designer shall select HVAC and refrigeration equipment without chlorofluorocarbons (CFC) based refrigerants.
- Ventilation Systems. Designer shall provide mechanical ventilation system according to ASHRAE Standard 62. Mechanical ventilation system shall have the capability to operate continuously during occupancy and designed not to be easily shut-down or otherwise defeated, such as blocked registers.



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- Drainage Systems. Designer shall design surface grades, storm drainage system, HVAC system, and other systems to avoid accumulation of standing water around in the building.
- Mold Prevention during Construction. Contractor shall ensure porous type building materials, insulation, and fabric, is kept dry to prevent the growth of mold and bacteria. Materials that have been affected by mold shall be abated or replaced. Building insulation that is damp or wet for 72 hours shall be replaced.
- Filtration Media Replacement before Occupancy. Contractor shall ensure that filtration media is replaced before occupancy.
- Thermal Comfort. Designer shall ensure that thermal comfort requirements are according to ASHRAE Standard 55.

DESIGN TEMPERATURES

	<u>Winter</u>	<u>Summer</u>
Outdoor Temperature	0°F	96° DB/66° WB
Inside Temperature (unless identified otherwise)	72°F	75° DB 40% RH

HEAT SOURCE

The heat source should be multiple gas fired high efficiency boilers. As this building is occupied 24/7, N + 1 redundancy in the boiler plant should be provided. The hot water design temperatures should be selected to achieve the maximum energy efficiency of the boilers.

COOLING SOURCE

Water cooled cooling equipment should be used for the building. Multiple units should be considered to reduce energy usage during partial loads and provide some level of redundancy.

VENTILATION

Ventilation is to be provided in compliance with the 2006 International Mechanical Code and ASHRAE Standard 62. An outside air flow measuring device will be provided at each air handler. A CO2 sensor should be considered to reset the outside air flow between minimum and maximum value.

HVAC SYSTEM

Multiple variable air volume air handlers with VAV boxes and hot water reheat coils should be considered. If the return air system is ducted, provide a return/relief fan for each air handling system. If plenum return air is used, provide relief fans for the building.

A dedicated make-up air system should be provide for the kitchen.

THERMAL ZONING

In addition to DFCM guidelines, each bed room must have individual temperature control.

CONTROLLABILITY OF SYSTEMS (Re: DFCM Design Requirements)

Maintaining space comfort temperature is an important consideration in the design of the mechanical system along with the proper ventilation within each space. This is accomplished best by the proper zoning of the space with regards to the mechanical system installed and the ability to control the temperature within each zone. The zoning for control of the space temperature shall be such that corner spaces having multiple exposures, office spaces for directors, managers, or other such individuals, and conference rooms larger than 200 square feet, shall have individual space control. Other multiple spaces shall be zoned with these spaces of like size, occupancy, and exposures are one zone and do not exceed more than four spaces per zone. Open spaces, such as open offices, shall not exceed one zone per every 750 square feet, Individual classroom spaces may be zoned as a single zone even if space exceeds 750 square feet with consideration for noise and air distribution (some large classroom spaces may need more than one zone for temperature control).



AIR DISTRIBUTION

Ductwork shall be galvanized steel and comply with SMACNA Standards. Ductwork should be oversized to reduce operating cost. Ductwork from the kitchen hood should be welded water tight and sloped from the exhaust fan down to the hood. Ductwork from the dishwasher should be aluminum or stainless steel, sealed water tight, and insulated in concealed areas to reduce condensing of the exhaust air.

HVAC PIPE DISTRIBUTION SYSTEMS

Utilize variable flow design with Variable Frequency drives on each distribution pump. Provide N + 1 redundancy in the heating distribution pumps.

AUTOMATIC TEMPERATURE CONTROLS

Direct Digital Controls (DDC) with electric damper and valve actuators.

FIRE SPRINKLING

Automatic wet-pipe sprinkler system. Piping will be standard weight black steel with mechanical couplings, threaded joints or welded joints. The Kitchen hood fire suppression is to be provided by the hood manufacturer.

PLUMBING

Provide multiple high efficiency gas fired water heater, to generate domestic hot water for the building. It is recommended that the water heaters be set to generate 140°F to 150°F water and a mixing valve be used to reduce the distribution temperature down to 120°F. This will help kill Legionella in the domestic hot water system. A separate water heater is recommended to be considered for the Kitchen. Provide a water softening system for soft water for the water heaters.

Provide a circulation loop with pumps to maintain constant circulation

MEDICAL GAS

An oxygen cylinder manifold will be required. Oxygen is required in eight of the resident rooms, 2 in each wing. Outlets will be required in each of these rooms. Piping and alarms must meet NFPA 99 requirements of the appropriate Level, as determined by the level of patient care in the facility. It is anticipated that the manifold size will be 5x5 or smaller, and if so, no dedicated mechanical ventilation of the cylinder manifold room is required.



3.3.4 Electrical Criteria

The new 73,000 square foot nursing home will have a 2,000 amp 277/480 volt utility service from Rocky Mountain Power (RMP). The electrical design will exceed the energy requirements in ASHREA 90.1 and IECC 2006 by at least 10%. The facility will qualify for Rocky Mountain Power's FinAnswer program and Questar's incentive programs. Communication cabling to the facility will be coordinated by the general contractor with the utility provider.

A 500 KVA 480/277 volt generator will provide power to the essential distribution system. Which will consist of a 100 amp 277/480 volt life safety, and a 600 amp 277/480 volt critical branch transfer switch. Emergency power system shall be designed to provide a minimum 24-hour run time.

The following low voltage systems will be installed in the facility: Cat 6 voice/data cabling and head-end equipment, nurse call system, Television system, CCTV, Wireless clock system, and card readers.

Codes and Guidelines

The electrical design for the new 73,000 square foot nursing home will meet the following code and guidelines requirements: NEC 2005 (NFPA 70), IBC 2006, AIA guideline 2006, NFPA 90 & 110, the IENSA, and the Department of Veteran Affairs Nursing Home Guidelines.

Normal Power Service

Normal power is provided by Rocky Mountain Power. The utility service will include a 2,000 amp 12470-480/277 pad mount transformer which will serve the facility's main distribution panel.

Essential Distribution Service

The essential distribution system will consist of a 500 KVA 480/277 volt generator which will feed a 600 amp 480/277 volt distribution panel. The Distribution panel serves a 600 amp critical branch transfer switch, and a 100 amp life safety transfer switch. The life safety transfer switch will serve egress lighting, alarms and alerting systems, communication systems used for issuing instructions during an emergency, and the generator set's receptacles and illumination. The Critical branch transfer switch will serve the following areas with a delayed automatic connection: Resident care, medication preparation, nurses' stations, smoke control, sump pumps, kitchen hood supply and exhaust systems, and exhaust fans for isolation room. The following pieces of equipment will be on the critical branch system with an extended delayed start: Heating systems for the resident care area.

Energy Saving

The electrical design will exceed the energy requirements in ASHREA 90.1 and IECC 2006 by at least 10%. Although the building will not be LEED certified, the design will be such that the building will meet the qualifications for 2 1/2 LEED EA points. Design team will work with Rocky Mountain Power under the FinAnswer program and with Questar to ensure the facility qualifies for the utilities' incentive programs. Electrical and mechanical systems should be designed in an integrated way to ensure that systems are not oversized.

Lighting

Lighting will comply with the Illuminating Engineering Society (IES) recommended levels. Natural light should be used wherever possible. The residents' rooms will have general lighting, exam lighting, night lights in the bedroom and restroom, and a reading light controlled through the pillow speaker in the nurse call system. The night light will be controlled at the room entrance. The resident corridors will have uniform lighting with an ability to reduce the uniform level of lighting at night. Corridor and common space lighting will be controlled via a lighting control panel connected to the building management system. Energy efficient ballasts and premium T8 lamps will be used to meet and exceed the ASHRAE 90.1 energy code requirements by at least 10%.



Communications

Communications to the facility will be provided by Qwest communications. Two 4" conduits will run from the street to the buildings MDF room. One of the 4" conduits will have inner-duct for fiber. Communication rooms will be provided in the facility such that no data run exceed 250'. Voice/data cabling will be CAT. 6.

Nurse call

A nurse call system will be installed with hard wired and wireless features. For example, the emergency, bath, patient & duty station will be hard wired, but the system will also be able to accommodate wireless phones and pagers used by the nursing staff.

Paging

Rather than installing a standalone paging system throughout the corridors. The paging function can be accomplished through the nurse call system's duty stations and wireless handsets and/or the phone system can also be utilized as a paging system.

Television

Cable television service may be provided by a local company and distributed to the resident rooms, common areas and dining rooms. Provisions for television are to be included in the design and construction. The television head end system will receive the service and the distribution system will include all cable, amplifiers, splitters, couplers, terminators, outlets and connectors as part of the program. A minimum 750 MHz bandwidth will be specified, and all outlets will be provided with +5 and +10 dBu at each television outlet.

Fire Alarm System

An addressable fire alarm system will be installed including horn & Chime strobes which can be switched between the horn alarm, chime & strobe only. The fire alarm system will run in conduit.

Clock System

A wireless GPS clock system will be installed in the facility.

Security and CCTV

The main entry doors shall have programmable entry locks with timers. Exterior main entry doors and delivery doors shall be equipped with a bell or intercom connected to the reception desk.

All exterior doors other than the main entrance shall be equipped with 30-second signal alarms and door contact switches. A key switch shall be located at the nurses' station to deactivate the door alarms.

Cameras will also be placed at all entrances and in common areas. Additional cameras will be required in areas housing residents with dementia. Doors in these areas will require key pads to enter and exit. All doors will unlock in case of fire, however doors with key pads will have a time delay before they unlock.

Cable management

12" cable tray will run in all corridors for low voltage cabling. All low voltage cabling will run in the cable tray with the exception of the fire alarm cable. Fire alarm wire will run in ¾" conduit. Low voltage cabling will run in raceway from the outlet to the cable tray. 18" ladder rack will be provided in the communication rooms.



Typical Lighting and Power Layouts (See sketches in **Section 4.2 Individual Room Data Sheets**)

Offices: Two parabolic lights per office (w/ occupancy sensor). Three to four power outlets one to two voice/data outlet (two data/one voice)

Conference Rooms: Parabolic lights place 8' on center. 4-6 dimmable fluorescent can lights. Four to six power outlets, and two voice/data jacks.

Resident room: The resident light will be mounted on wall or in the ceiling above the resident's head and will be controlled by the nurse call pillow speaker and momentary wall switches. There will be a fluorescent exam light over bed, additional fluorescent can lights for general lighting and two LED recessed wall mounted night lights (in the resident room and in the restroom controlled at the door. There will be an outlet on every wall and a TV jack for the television,

Resident headwall:

Five power outlets, one voice/data jack, and two light switches. Three outlets will be on emergency and two will be on normal power.

Resident bathrooms: A GFI outlet at the sink, a light over the sink, a light in the shower, and an additional can light in the center of the bathroom.

Nurse Stations: Nurse Stations will have three to four parabolic lights behind the station and dimmable can lights over the station. Work stations will also have task lighting. Each nurse station will have at least six power outlets on emergency power and two outlets on normal power; three voice/data jacks, and a nurse call station.

Parking lot lights: Light poles will be required in the parking areas. The poles will be 15' high, and will be the cutoff type disk type fixture. The average foot candle in parking lot will be 1.5 foot candle average.



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3.3.5 Food Service

Kitchen Area Design Operating Rationale and Basis of Criteria

General Description:

This project will be a Nursing Home facility in Ogden, Utah, for the Veterans Administration. This section specifically relates to the Food Facility and the design requirements required to accomplish meal preparation, delivery and clean up for 120 permanent residents and staff.

Occupancy:

The facility is programmed to house 120 permanent residents and up to 120 full and part time employees. The total number of resident meals will be 360 per day. It is expected that the employee load will add approximately 90 additional meals per day or a total meal load of 450 per day.

Production Type:

The food will be delivered in either a raw state or semi processed. All food will be prepared and cooked on site for each meal period. This facility will not implement Cook-Chill or re-thermalization in the production of the meals.

Delivery Type:

This facility will implement a central dining room for meal delivery. In room meals (tray delivery) will not be encouraged unless medically required. Meals will be individually plated up to serve to the patients in a 'family' type environment. Dirty dishes will be bussed back to the kitchen for clean-up. A small tray assembly area will be provided in the kitchen for those patients requiring it. A separate dining room for special needs will be served in the same manner as the main dining room.

Space Criteria:

Space criteria has been developed based on the guidelines set by the Veterans Health Administration: Nutrition and Food Service standards (chapter 224), for 450 meals per day. These criteria are listed in the Kitchen Area Space Program below.

Adjacencies:

The receiving area is directly linked to the loading dock or will have direct access to the loading dock. Dry storage, non-food storage, housekeeping, hazardous supplies and cleaning supplies are located directly to the receiving area. The main food preparation area is directly linked to the receiving area and is also directly linked to the walk-in cooler and freezer, nourishment preparation, pot washing, dishwashing, office and patient food serving. Patient food serving, dishwashing and pot washing are directly linked to the dining room. The office is directly linked to the dining room and the main kitchen. Cart wash area is directly linked to the dishwashing area. The employee lockers and rest room are adjacent to the main kitchen through the nourishment prep area.

Refer to **Section 4.2 Individual Room Data Sheets** for the schematic plan which illustrates the adjacencies as described here.

Kitchen Area Space Criteria

A	<u>Main Kitchen Staff and Administrative Areas:</u>					
	1. Office, Chief of Nutrition and Food Service					120 NSF
	Equipment:	ITEM	QTY	UNIT	DESCRIPTION	
		#E-1	1	EACH	COMPUTER	
B	<u>Staff Lounge, Lockers and Toilets:</u>					
	1. Locker Area					80 NSF
	2. Toilet, Staff					50 NSF



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Equipment:	ITEM	QTY	UNIT	DESCRIPTION
	#K-1	5	EACH	LOCKERS

C Main Kitchen Receiving and Storage Areas:

1. Receiving Area	90 NSF
2. Storage, Non-Food	90 NSF
3. Storage, Dry Food and Ingredient Control	225 NSF
4. Storage, Refrigerated and Frozen Foods	315 NSF

Equipment:	ITEM	QTY	UNIT	DESCRIPTION
	#K-2	1	LOT	DRY STORAGE SHELVING
	#K-3	1	LOT	WALK-IN COOLER AND FREEZER BOX
	#K-4A	1	SYS	WALK-IN FREEZER REFRIGERATION: CONDENSER
	#K-4B	1	SYS	WALK-IN FREEZER REFRIGERATION: BLOWER COIL
	#K-5A	1	SYS	WALK-IN COOLER REFRIGERATION: CONDENSER
	#K-5B	1	SYS	WALK-IN COOLER REFRIGERATION: BLOWER COIL
	#K-6	1	LOT	WALK-IN SHELVING
	#K-7	1	LOT	DUNNAGE RACK

D Main Kitchen Food Preparation Area:

1. Food Preparation and Production	615 NSF
2. Nourishment Preparation	250 NSF

Equipment:	ITEM	QTY	UNIT	DESCRIPTION
	#K-8	6	EACH	SPEED RACK: MOBILE
	#K-9	1	LOT	KITCHEN SHELVING
	#K-10	2	EACH	WALL MOUNT HAND SINK
	#K-11	1	EACH	STAINLESS STEEL TWO COMPARTMENT SINK
	#K-12	1	EACH	STAINLESS STEEL WALL MOUNT UTENSIL RACK
	#K-13	1	EACH	STAINLESS STEEL WORK TABLE
	#K-14	1	EACH	6 QUART MIXER
	#K-15	1	EACH	BLENDER
	#K-16	1	EACH	FOOD PROCESSOR
	#K-17	1	EACH	20 QUART MIXER WITH STAND
	#K-18	1	EACH	STAINLESS STEEL WORK TABLE
	#K-19	1	EACH	SLICER
	#K-20	1	EACH	ICE MAKER AND BIN
	#K-21	1	EACH	STAINLESS STEEL ISLAND WORK TABLE
	#K-22	1	EACH	STAINLESS STEEL UTENSIL RACK: CEILING MOUNT
	#K-23	1	EACH	40 QUART MIXER
	#K-24	1	EACH	BAKERY WORK TABLE
	#K-25	1	EACH	STAINLESS STEEL WALL SHELF
	#K-26	4	EACH	INGREDIENT BINS: MOBILE
	#K-27	1	EACH	PROOF BOX: MOBILE
	#K-28	1	EACH	STAINLESS STEEL EXHAUST HOOD: TYPE 1
	#K-29	1	SYS	FIRE PROTECTION SYSTEM
	#K-30	1	EACH	STEAMER
	#K-31	2	EACH	12 GALLON TILT KETTLE
	#K-32	1	EACH	TILT SKILLET
	#K-33	1	EACH	FLAT TOP RANGE: WITH STANDARD OVEN
	#K-34	2	EACH	SIX BURNER RANGE: WITH STANDARD OVEN
	#K-35	1	EACH	STACKED CONVECTION OVEN



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E Main Kitchen Patient Serving Area:

1. Serving Counter

280 NSF

Equipment:

ITEM	QTY	UNIT	DESCRIPTION
#K-10	1	EACH	WALL MOUNT HAND SINK
#K-36	1	EACH	ROTARY TOASTER
#K-37	1	EACH	HOT FOOD WARMING CABINET: MOBILE
#K-38	1	EACH	REACH-IN REFRIGERATOR: TWO SECTION, MOBILE
#K-39	1	EACH	REACH-IN FREEZER: ONE SECTION, MOBILE
#K-40	1	EACH	STAINLESS STEEL UTILITY CABINET
#K-41	1	EACH	DOUBLE STAINLESS STEEL WALL SHELF
#K-42	1	EACH	MICROWAVE OVEN
#K-43	1	EACH	DRINK DISPENSING SYSTEM: PROVIDED BY VENDER
#K-44	1	LOT	STAINLESS STEEL CORNER GUARDS
#K-45	1	EACH	STAINLESS STEEL SERVICE COUNTER
#K-46	1	EACH	HOT FOOD WARMER: FOUR SECTIONS
#K-47	1	EACH	REFRIGERATOR COLD PAN
#K-48	1	EACH	STAINLESS STEEL SERVING COUNTER

F Main Kitchen Sanitation Areas:

1. Dishwashing

450 NSF

2. Pot Washing

215 NSF

3. Cart Wash Area

130 NSF

Equipment:

ITEM	QTY	UNIT	DESCRIPTION
#K-10	1	EACH	WALL MOUNT HAND SINK
#K-49	1	EACH	STAINLESS STEEL DIRTY DISH TABLE
#K-50	1	EACH	STAINLESS STEEL WALL MOUNT RACK SHELF
#K-51	1	EACH	DISPOSER
#K-52	1	EACH	PRE-RINSE SPRAY FAUCET
#K-53	1	EACH	DISWASHER: GAS
#K-54	1	EACH	STAINLESS STEEL VENT HOOD: TYPE II
#K-55	1	EACH	BOOSTER HEATER: GAS
#K-56	1	EACH	STAINLESS STEEL CLEAN DISH TABLE
#K-57	1	EACH	STAINLESS STEEL FOUR COMPARTMENT SINK
#K-58	1	EACH	STAINLESS STEEL WALL SHELF/POT RACK
#K-59	1	EACH	DISPOSER
#K-60	1	EACH	PRE RINSE SPRAY FAUCET
#K-61	1	EACH	HOSE REEL

G Main kitchen Support Areas:

1. Housekeeping Aides Closet

40 NSF

2. Storage, Hazardous Supplies

80 NSF

3. Storage, Cleaning Supplies

100 NSF

Equipment:

ITEM	QTY	UNIT	DESCRIPTION
#K-62	1	EACH	MOP SINK: PROVIDED BY PLUMBING SECTION
#K-63	1	EACH	STAINLESS STEEL CHEMICAL STORAGE CABINET

Total Square Footage

3,130 NSF



3.3.6 Laundry Service

The facility will have a central laundry service with a minimum of three commercial-type laundry machines and three commercial type dryers. The program area for the laundry service is 600 NSF. The central laundry service shall be located in the resident support area and it should be generally close to housekeeping. The laundry service shall be carefully designed with three separate areas to incorporate a logical sequence from soiled linen to wash to dry to press to a sterile linen holding area for distribution back to the nursing home.

OSHA now recommends, and will possibly soon require, a complete separation of soiled linen from clean linens. A negative airflow in the design away from clean linen and toward soiled linen shall be implemented. Also the requirement of commercial dryers needs to be considered in the design. Dryers require a significant amount of makeup air. The dryer should be placed against an exterior wall with an integrated baffle to direct the dryer air directly out the building.

Laundry services require a considerable amount of labor which should be balanced and considered in the initial expenditure for the equipment costs. A reduction in labor costs and an increase in energy efficiency will be provided if high quality (i.e. provide equipment such as larger high speed washer-extractors with programmable functions and centrifugal extraction spin processes) machinery is specified in the initial design. This increases work staff productivity and promotes efficiency in an often overlooked area of operations. State of the art washers include programmable features designed to maximize efficiency such as temperature-controlled fill, thermal cool-down, overnight soak, and through the door spray rinse.

With 120 residents the laundry load would experience a minimum daily total of 1800 pounds. Typical calculations for skilled care nursing homes indicate that an average laundry load is somewhere in the neighborhood of 15 to 25 pounds per resident per day. If this were to be accomplished in a typical 8-hour work day, then (3) 100 pound 100 Gforce washers or (3) high-speed 100 pound 235 Gforce washers ought to be specified. Larger washers will offer greater operational savings for the facility.

Laundry machines ought to be spaced 18-inches apart between washers and dryers can be placed side-by-side. Certain equipment requires 12-inch thick foundations and it is preferable to place the equipment on a 4-inch or 6-inch raised curb. Integral epoxy flooring should be considered as a floor finish in the laundry areas.

Coordination of the design disciplines is critical in order to provide the appropriate foundations, sizing of equipment, water and sewer lines, gas lines size and pressure, electrical voltage, wire guage size and breaker capacity. Location of equipment shall be efficiently designed so as to minimize interference with entries, exits, columns, drain locations, exhaust areas, ventilation and machinery access. Doors shall be provided with appropriate width to remove and replace the equipment as necessary.

All costs for laundry equipment are included as a part of the building program.



3.3.7

System Commissioning Controls

This project will require a thorough commissioning process. The commissioning team will be under direct contract through DFCM and the costs for commissioning are not to be included in the project construction costs. The goal of the commissioning process is to insure that the building operates within the parameters of the design and construction documents. Costs for inadequate and malfunctioning systems are to be borne by the contractor for all corrections.

Systems shall be verified for functioning to the design parameters with consideration that temperatures and airflows are being maintained, pressure relationships are consistent with the design documents and all safety and alarm functions are operational.

A commissioning team leader will work under the direct supervision of DFCM for this project. The duties and responsibilities of the commissioning team shall include the following:

- Review and give recommendations on the design documents prior to construction activities
- Review the contractors' submittals prior to construction, installation and commissioning
- Verification of testing of all mechanical and electrical equipment
- Verification of testing, adjusting and balancing of air systems
- Review and approval of operations and maintenance manuals
- Training of owner's staff and personnel

Commissioning coordination shall be the shared responsibility of the general contractor and the owner. Minimum system commissioning shall include:

- Temperature controls, thermostats and systems
- All HVAC Systems
- Plumbing Water Supply Distribution Systems and Controls
- Plumbing Waste Systems
- Natural Gas Distribution Systems and Pressure Relief Mechanisms
- Variable Frequency Drives
- Fire Suppression Systems
- Power and Lighting Electrical Systems
- Emergency Power and Generator Systems
- Security and Alarm Systems

The commissioning agent shall be directly involved with the project as early as possible. The A/E team shall coordinate the recommendations of the owner's commissioning agent with the construction documents.



3.3.8 Value Engineering

Value Engineering can briefly be described as an effort for the owner to meet all of these program requirements in the most cost-effective manner.

The Federal Government's General Services Administration defines Value Engineering (VE) as:

"an organized effort directed at analyzing the functions of systems, equipment, facilities, services and supplies for the purpose of achieving the essential functions at the lowest life cycle cost consistent with the required performance, reliability, quality and safety". Numerous other terms (value management, value analysis, etc.) are also used when referring to VE. While there are subtle differences among these terms they all refer to-generally the same process.

Participation in VE sessions shall be required by the architects and engineers as a part of this program. This includes project presentation, evaluations, and recommendations from the A/E team. The owner may enlist an independent cold team to aid in the VE process and will pay for the services of the cold team.



3.3.9 Sustainable Design and Energy Efficiency

The American Institute of Architects (AIA) defines sustainable design as:

Sustainability envisions the enduring prosperity of all living things.

Sustainable design seeks to create communities, buildings, and products that contribute to this vision.

To paraphrase educator and author David Orr: Sustainable design is the careful meshing of human purposes with the larger patterns and flows of the natural world.

To paraphrase architect Bill Reed: Sustainable design is a process that supports and improves the health of the systems that sustain life.

AIA/COTE 10 Measures of Sustainable Design

Sustainable Design Intent and Innovation

Sustainable design is rooted in a mindset that understands humans as an integral part of nature and responsible for stewardship of natural systems. Sustainable design begins with a connection to personal values and embraces the ecological, economic, and social circumstances of a project. Architectural expression itself comes from this intent, responding to the specifics region, watershed, community, neighborhood, and site.

Regional/Community Design and Connectivity

Sustainable design recognizes the unique cultural and natural character of place, promotes regional and community identity, contributes to public space and community interaction, and seeks to reduce auto travel and parking requirements and promote alternative transit strategies.

Land Use and Site Ecology

Sustainable design reveals how natural systems can thrive in the presence of human development, relates to ecosystems at different scales, and creates, re-creates or preserves open space, permeable groundscape, and/or on-site ecosystems.

Bioclimatic Design

Sustainable design conserves resources and optimizes human comfort through connections with the flows of bioclimatic region, using place-based design to benefit from free energies—sun, wind, and water. In footprint, section, orientation, and massing, sustainable design responds to site, sun path, breezes, and seasonal and daily cycles.

Light and Air

Sustainable design creates a comfortable and healthy interior environment while providing abundant daylight and fresh air. Daylight, lighting design, natural ventilation, improved indoor air quality, and views, enhance the vital human link to nature.

Water Cycle

Recognizing water as an essential resource, sustainable design conserves water supplies, manages site water and drainage, and capitalizes on renewable site sources using water-conserving strategies, fixtures, appliances, and equipment.



Energy Flows and Energy Future

Rooted in passive strategies, sustainable design contributes to energy conservation by reducing or eliminating the need for lighting and mechanical heating and cooling. Smaller and more efficient building systems reduce pollution and improve building performance and comfort. Controls and technologies, lighting strategies, and on-site renewable energy should be employed with long-term impacts in mind.

Materials, Building Envelope, and Construction

Using a life cycle lens, selection of materials and products can conserve resources, reduce the impacts of harvest/manufacture/transport, improve building performance, and secure human health and comfort. High-performance building envelopes improve comfort and reduce energy use and pollution. Sustainable design promotes recycling through the life of the building.

Long Life, Loose Fit

Sustainable design seeks to optimize ecological, social, and economic value over time. Materials, systems, and design solutions enhance versatility, durability, and adaptive reuse potential. Sustainable design begins with right-sizing and foresees future adaptations.

Collective Wisdom and Feedback Loops

Sustainable design recognizes that the most intelligent design strategies evolve over time through shared knowledge within a large community. Lessons learned from the integrated design process and from the site and building themselves over time should contribute to building performance, occupant satisfaction, and design of future projects.

The Northern Utah State Veterans Nursing Home shall implement the best practices of sustainable design within the parameters of the construction cost budget. There is an inherent monetary tradeoff between sustainable systems and energy efficiency measures and long-term building life cycle costs. The cost implications shall be evaluated by the A/E design team and presented to the owner to develop an effective sustainable building plan and objective. As new technologies emerge they shall be considered for implementation in building projects. With increased frequency of use, the costs for new technologies decreases and their use tends to become more commonplace.

The goal of green building practices is to generally reduce the negative environmental impacts of buildings. Considerable effort in the construction industry has recently occurred and public interest has stimulated a renewed vigor for the implementation of green building practices.

Leadership and Energy Efficient Design (LEED) certification will not be required for this building; however, it is the intent of the owner to qualify for a minimum of the 3 prerequisite Energy and Atmosphere (EA) credits and to qualify for 2 ½ points in the EA category for credit one. The DFCM already has standards in place which require state buildings to exceed the industry accepted ASHRAE building code requirements.

The State of Utah's Energy Program Director was involved in the programming process in order to establish some criteria for this building early on in the pre-design process. The state will require that the building is to have energy efficiency of 10% better than ASHRAE 90.1 standards for electrical side saving to receive an incentive under the Rocky Mountain Power Program. The building will also comply with the state's requirements for increased energy performance in section 3 of the DFCM Design requirements which applies to both gas and electrical energy use. (COMCHECK).

Energy incentive programs from Rocky Mountain Power (FinAnswer) and Questar will be incorporated into the design of the project. The A/E design team will coordinate with the state's Energy Program Director and representatives from the utilities companies.



The Rocky Mountain Power guideline for the Energy FinAnswer New Construction Design Assistance Program Manual is included as an appendix at the end of this program. Energy Efficiency Measures will be discussed with the utilities and incorporated into the documents prior to construction. The life cycle costs for the building and design loads shall be considered. There will be an increased level of communication between the A/E team and the energy engineers from the utilities which will involve design meetings during the schematic design phase.

The positive aspect of sustainable designs is that the owner will realize cost savings over time which makes the initial up front cost easier to bear.

Compliance with the VA Standards for Energy Efficiency in New Federal Housing Projects is not required for this building because this will be a state owned building. Confirmation of compliance with federal requirements for energy efficiency was discussed during the programming process with the VA's Federal architect in Washington, DC.

Energy-Saving Design Opportunities

The A/E design team should consider the following strategies for this project:

- Verify that building elements are designed, installed and calibrated to operate as intended
- Design building systems to reduce energy consumption
- Design building envelope to reduce energy use
- Design fenestration to reduce the demand for artificial lighting
- Design electrical systems to accommodate future renewable energy sources
- Design building to allow for future use of solar energy systems
- Reduce ozone depletion and comply with the Montreal Protocol in the HVAC and refrigeration design
- Provide for ongoing building systems analysis by measurement and verification over time
- Select products & fixtures that are energy efficient or Energy Star rated (DFCM Standard).

Sustainable Design Opportunities

The A/E design team and builder should consider the following strategies for this project:

- Provide recycling areas
- Recycle construction waste
- Use building materials with recycled content
- Use building materials that are locally harvested or manufactured
- Use wood products which bear the Forestry Stewardship Council (FSC) label
- Use fixtures that conserve water
- Use irrigation systems & native plants that conserve water
- Use low-VOC products and interior finishes



3.3.10 Building Occupancy Classification

The codes and standards for this project are highlighted, described and outlined in **Section 3.1.5 Codes, Regulations and Safety**. In all cases the most recent adopted editions of the codes shall apply and, in case of a conflict, the standards of the more stringent code shall apply.

Occupancy: The building shall be classified as an I-2 occupancy.

Building Type: The building construction type will most likely be classified as Type 3B construction.

Fire separation, requirements for exits and travel distances for the facility shall meet the requirements of the applicable building codes including the International Building Code (IBC).

The requirements of the applicable NFPA codes apply to this project.

The VA, the DFCM and other governing agencies may impose additional requirements for this project.

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4.0 SPACE PROGRAM



NJRA ARCHITECTS
370 East 500 South Suite 101
Salt Lake City, Utah 84111
801.364.9259

Northern Utah State Veterans Nursing Home

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Space Programming

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

4.0 SPACE PROGRAMMING

4.1 Space and Area Program

The sheets in **Section 3.2.2 Space Planning** Areas describe the square footage requirements for the Northern Utah State Veterans Nursing Home in accordance with the VA Nursing Home Design Guide.

A finish schedule for this project is included in **Section 5.0 Project Cost Estimate**.



Space Programming



















Northern Utah State Veterans Nursing Home

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4.2 Individual Space Data Sheets

The following individual space data sheets describe the space needs for specific and unique program areas in the Northern Utah State Veterans Nursing Home in accordance with the VA Nursing Home Design Guide.

SYMBOL LEGEND	
SYMBOL	DESCRIPTION
WIRING DEVICES	
	RECEPTACLE, DUPLEX: NEMA 5-20R.
	RECEPTACLE, DUPLEX, ABOVE COUNTER: NEMA 5-20R.
	RECEPTACLE, DUPLEX, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, DUPLEX WITH GROUND FAULT CIRCUIT INTERRUPTER, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE: NEMA 5-20R.
	RECEPTACLE, QUADRAPLEX, HOSPITAL GRADE ON EMERGENCY POWER: NEMA 5-20R.
	RECEPTACLE, RANGE: NEMA 10-50R.
	FLUSH FLOOR BOX. "F#" SHOWN ON DRAWINGS. REFER TO WIRING DEVICE SCHEDULE IN SECTION 16140 FOR CONFIGURATION AND DEVICES.
	NIGHT LIGHT
STRUCTURED CABLING	
	OUTLET, BUILDING STANDARD COMBINATION TELEPHONE/ DATA COMMUNICATION.
NURSE CALL	
	CORRIDOR LIGHT.
	BATHROOM PULL CORD STATION.
	EMERGENCY ASSISTANCE CODE BLUE CALL STATION.
	TOUCH SCREEN NURSE CALL MASTER STATION.
TV DISTRIBUTION	
	TV OUTLET.



Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

Room Number: B1 / C1
Room Name: Semi-Private Bed Room
Category: Resident Area

Number of Occupants: 2

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	
24 hours per day	X
Other	
MECHANICAL	
Temperature / Humidity	
Summer	76 deg F, Max 50% RH
Winter	78 deg F, Min 30% RH
Min. Air Changes / Hour	4 AC/H
Min. % Outside Air	2 AC/H
Pressure	N/A
Noise Criteria	Max 35 NC
PLUMBING	
Adjacent Toilet Room	
Oxygen - Dedicated Rooms	X
Shared Toilet Room	X
Toilet	X
Lavatory	X
Shower	X
Floor Drain	X
Hydrotherapy Bath	
Tub	
Ice and Water Station	
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	X
Carpet	
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Integral coved
Walls	
Gypsum Board	X
Paint	X
Wall Covering	
Ceramic Tile	In bathrooms
Ceilings	
Exposed	
Acoustic Tile	
Gypsum Board	X
Height	9'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	3'-8" at bedroom, 3'-0" at bath
ELECTRICAL AS INDICATED	

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Lavatory w/ mirror B. Water closet w/ grab bars C. Roll-in shower w/ grab bars & (2) controls D. Louver blinds w/ curtains E. TV wall-mount bracket	F. Guest chair G. Television H. Resident bed I. Bedside table J. Wardrobe K. Dresser





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

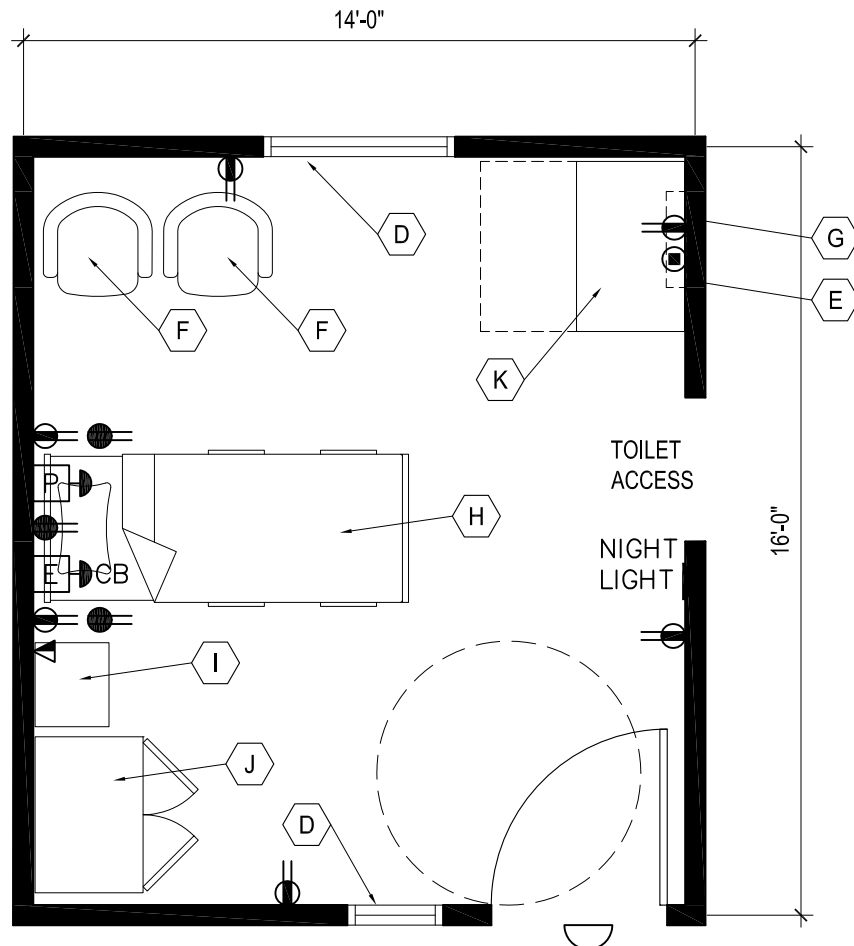
Room Number: B2 / C2
Room Name: Private Bed Room
Category: Resident Area

Number of Occupants: 1

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	
24 hours per day	X
Other	
MECHANICAL	
Temperature / Humidity	
Summer	76 deg F, Max 50% RH
Winter	78 deg F, Min 30% RH
Min. Air Changes / Hour	4 AC/H
Min. % Outside Air	2 AC/H
Pressure	N/A
Noise Criteria	Max 35 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	X
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	X
Carpet	
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Integral vinyl
Walls	
Gypsum Board	X
Paint	X
Wall Covering	
Ceramic Tile	In bathrooms
Ceilings	
Exposed	
Acoustic Tile	
Gypsum Board	X
Height	
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	3'-8"
ELECTRICAL AS INDICATED	

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Lavatory w/ mirror B. Water closet w/ grab bars C. Roll-in shower w/ grab bars & (2) controls D. Louver blinds w/ curtains E. TV wall-mount bracket	F. Guest chair G. Television H. Resident bed I. Bedside table J. Wardrobe K. Dresser



B2/C2

PRIVATE BED ROOM

1/4" = 1'-0"

224 NSF





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

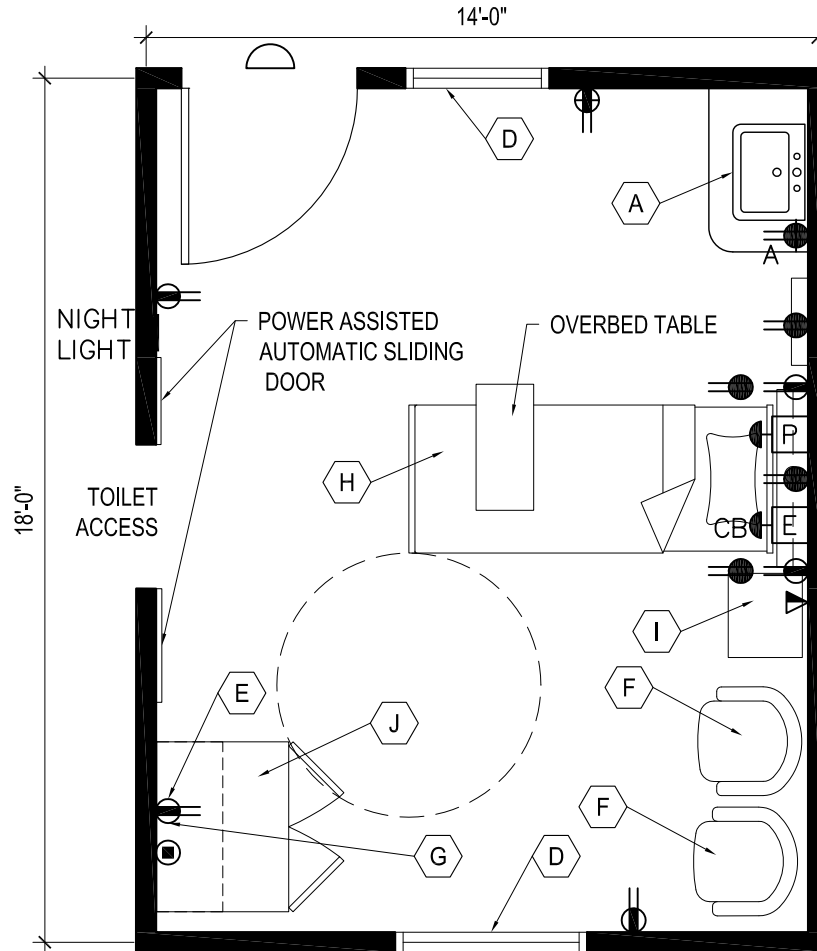
Room Number: B3 / C3
Room Name: Special Care Bed Room
Category: Resident Area

Number of Occupants: 1

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	
24 hours per day	X
Other	
MECHANICAL	
Temperature / Humidity	
Summer	76 deg F, Max 50% RH
Winter	78 deg F, Min 30% RH
Min. Air Changes / Hour	4 AC/H
Min. % Outside Air	2 AC/H
Pressure	N/A
Noise Criteria	Max 35 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	X
Shared Toilet Room	
Toilet	
Lavatory	X
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	X
Carpet	
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Integral vinyl
Walls	
Gypsum Board	X
Paint	X
Wall Covering	
Ceramic Tile	In bathrooms
Ceilings	
Exposed	
Acoustic Tile	
Gypsum Board	X
Height	8'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	3'-8"
ELECTRICAL AS INDICATED	

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Lavatory w/ mirror B. Water closet w/ grab bars C. Roll-in shower w/ grab bars & (2) controls D. Louver blinds w/ curtains E. TV wall-mount bracket	F. Guest chair G. Television H. Resident bed I. Bedside table J. Wardrobe K. Dresser



SPECIAL CARE BED ROOM

B3/C3

1/4" = 1'-0"

252 NSF





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

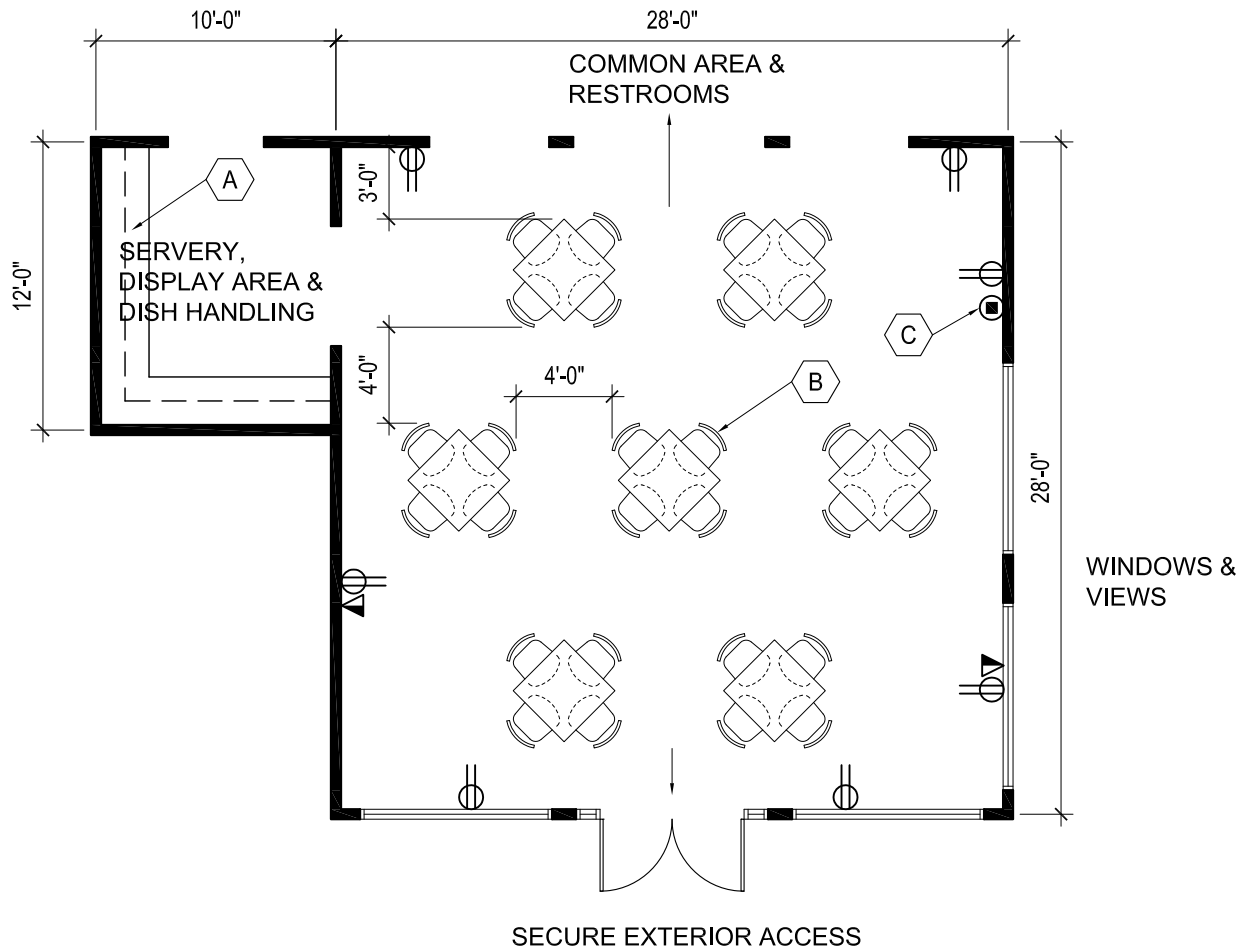
Room Number: C8
Room Name: Specialty Resident Dining Room
Category: Specialty Residential House

Number of Occupants: 30

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	X
24 hours per day	
Other	
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F, Max 50% RH
Winter	72 deg F, Min 30% RH
Min. Air Changes / Hour	10 AC/H
Min. % Outside Air	As per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 45 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	X
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	
Carpet	Carpet tile
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Carpet
Walls	
Gypsum Board	X
Paint	
Wall Covering	Acoustic panel
Ceramic Tile	
Ceilings	
Exposed	
Acoustic Tile	X
Gypsum Board	
Height	10'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	(2) 3'-0"
ELECTRICAL AS INDICATED	
Daylight	X
Views	X

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Plastic laminate base cabinet and uppers	B. Tables and chairs
	C. Television



C8 DINING ROOM

1/8" = 1'-0"

900 NSF





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

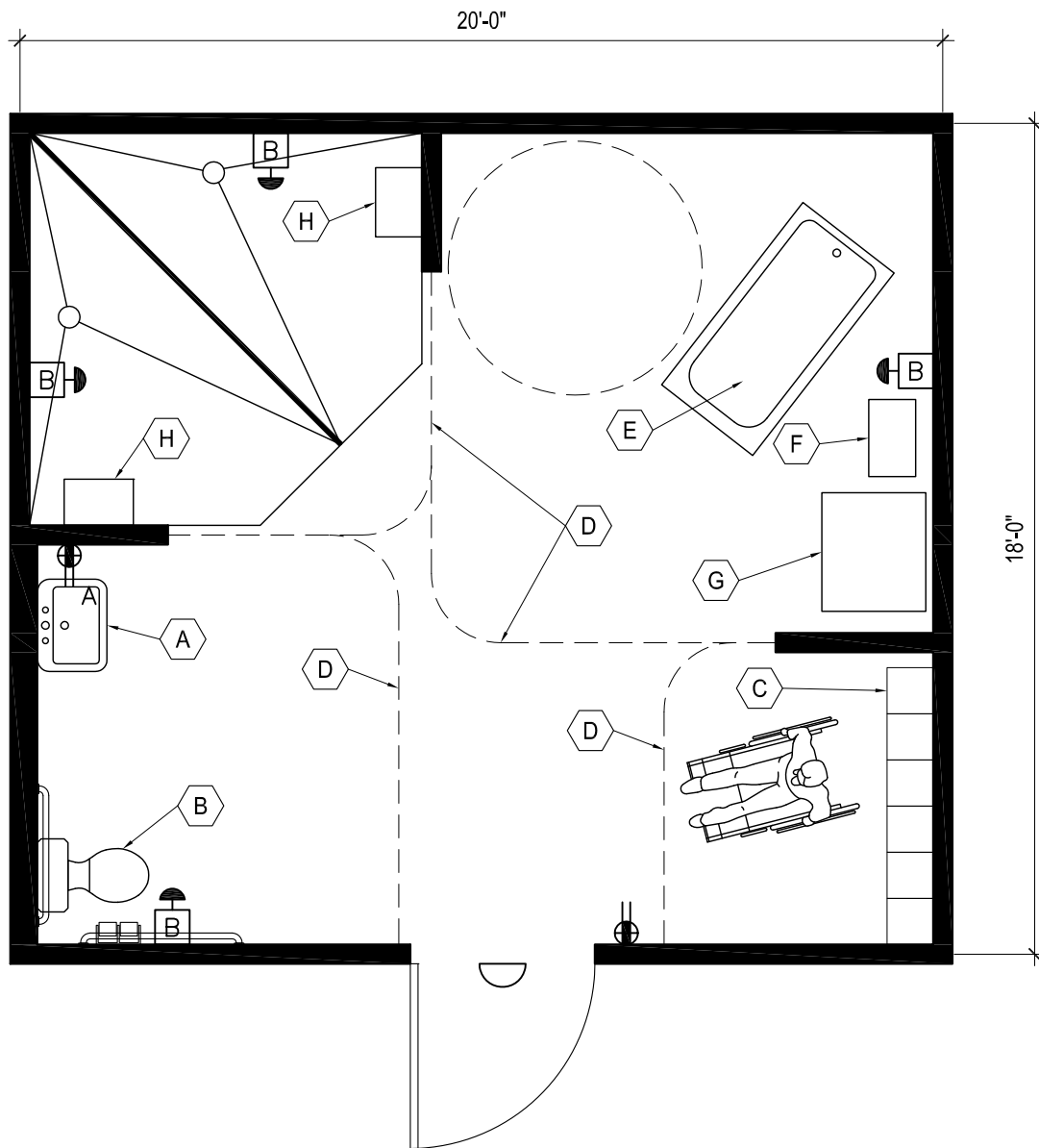
Room Number: F2
Room Name: Bathing Suite
Category: Residential Neighborhood
Patient Area

Number of Occupants: 5

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	X
24 hours per day	
Other	
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F Max
Winter	72 deg F Min
Min. Air Changes / Hour	10 AC/H
Min. % Outside Air	N/A
Pressure	Negative
Noise Criteria	Max 40 NC
PLUMBING	
Adjacent Toilet Room	
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	X
Lavatory	X
Shower	X
Floor Drain	X
Hydrotherapy Bath	X
Tub	
Ice and Water Station	
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	X
Carpet	
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Integral coved
Walls	
Gypsum Board	X
Paint	Epoxy paint
Wall Covering	
Ceramic Tile	X
Ceilings	
Exposed	
Acoustic Tile	
Gypsum Board	X
Height	10'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	3'-8"
ELECTRICAL AS INDICATED	

Equipment (By Contractor): A. Hand sink w/ mirror B. Water closet w/ grab bars C. Lockers D. Privacy curtain E. Walk-in style bathtub with resident lift & water and air jets F. Plastic laminate casework for towel storage G. Plastic laminate casework for bathing supplies storage	Furnishings (By Owner / FF&E): H. Shower chair
--	--



F2 BATHING SUITE

1/4" = 1'-0"

375 NSF



Northern Utah State Veterans Nursing Home

BATHING SUITE



Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

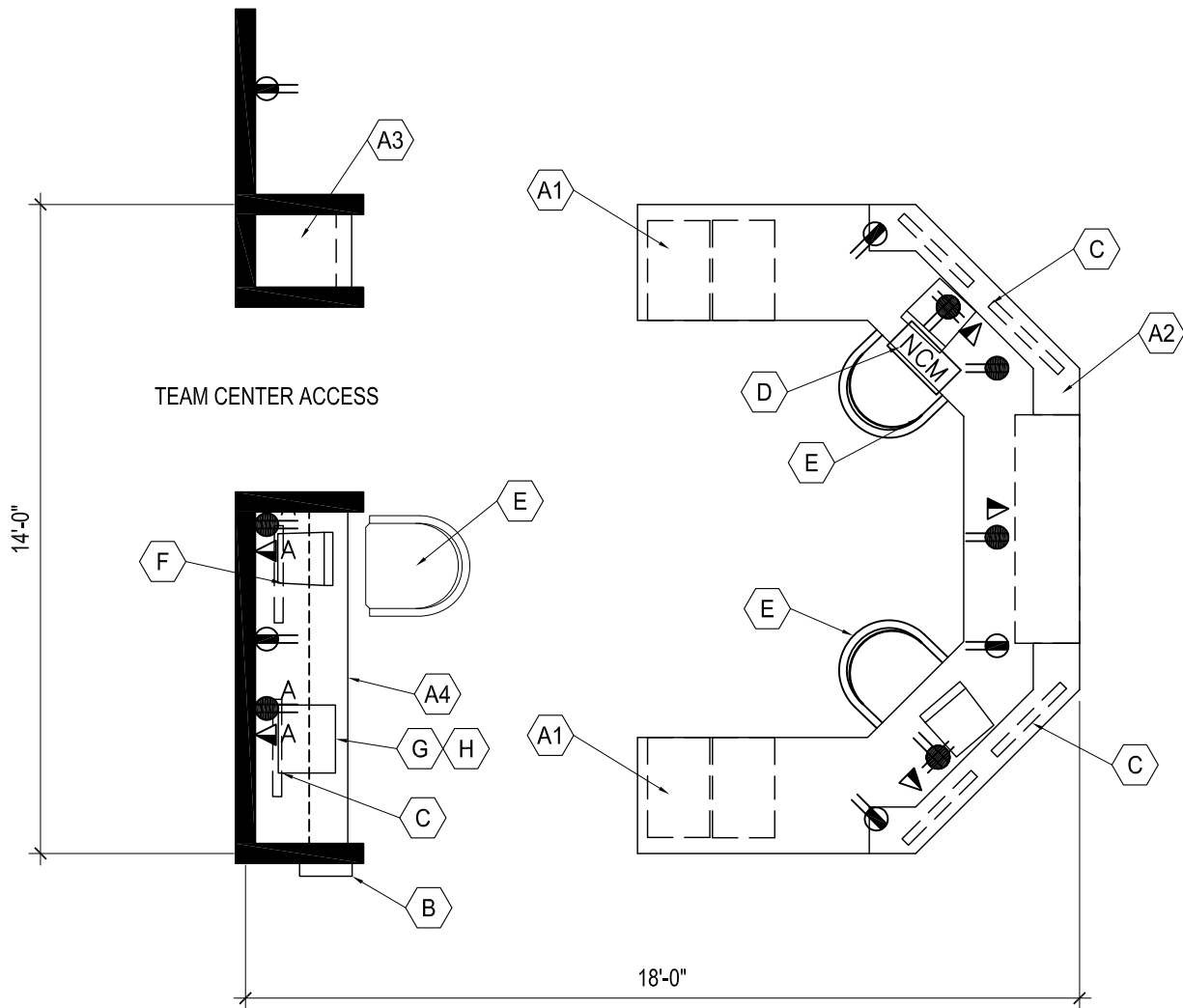
Room Number: G1
Room Name: Nurses' Station
Category: Residential Neighborhood
Support Area

Number of Occupants: 3

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	
24 hours per day	X
Other	
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F, Max 50% RH
Winter	72 deg F, Min 30% RH
Min. Air Changes / Hour	N/A
Min. % Outside Air	As per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 40 NC
PLUMBING	
Adjacent Toilet Room	
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	
Carpet	X
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Carpet
Walls	
Gypsum Board	X
Paint	X
Wall Covering	X
Ceramic Tile	
Ceilings	
Exposed	
Acoustic Tile	
Gypsum Board	
Height	9'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	
ELECTRICAL AS INDICATED	

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Plastic laminate casework: <ol style="list-style-type: none"> Undercounter file cabinets High counter Files / charts storage Work desk w/ upper cabinets B. Medical gas alarms C. Task lighting D. Nurse call console	E. Task chair F. Computer monitor G. Printer H. Fax machine



G1 NURSES' STATION 1/4" = 1'-0" 252 NSF





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs
Ogden, Utah

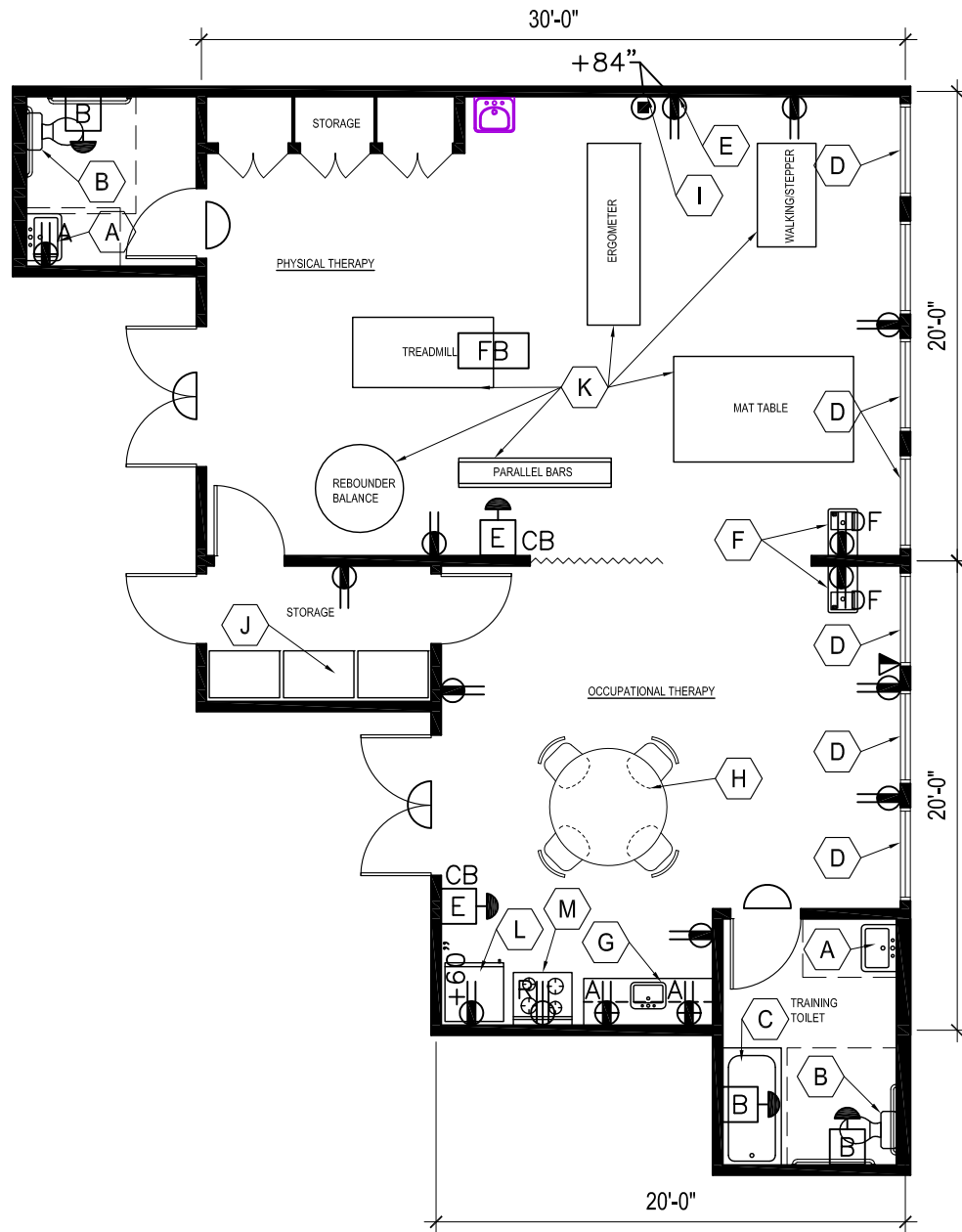
Room Number: I1 / I2
Room Name: Physical Therapy &
Occupational Therapy
Category: Therapeutic Area

Number of Occupants: 10

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	X
24 hours per day	
Other	
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F, Max 50% RH
Winter	72 deg F, Min 30% RH
Min. Air Changes / Hour	10 AC/H
Min. % Outside Air	As per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 40 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	X
Lavatory	X
Shower	
Floor Drain	X
Hydrotherapy Bath	
Tub	X
Ice and Water Station	
Sinks	X
As Required	

ARCHITECTURAL	
Floors	
Vinyl	X
Carpet	
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Integral vinyl
Walls	
Gypsum Board	X
Paint	X
Wall Covering	
Ceramic Tile	
Ceilings	
Exposed	
Acoustic Tile	X
Gypsum Board	
Height	10'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	(2) 3'-0"
ELECTRICAL AS INDICATED	

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Lavatory w/ mirror	H. Table and chairs
B. Water closet w/ grab bars	I. Television
C. Training tub	J. Carts
D. Louver blinds	K. Exercise equipment
E. TV wall-mount bracket	L. Refrigerator
F. Drinking fountain	M. Stove w/ accessible controls
G. Plastic laminate base cabinet w/ uppers	
	A/E shall coordinate power requirements w/ owner's fixture consultant



11/12 **THERAPY ROOMS** 1/8" = 1'-0" 1000 NSF





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

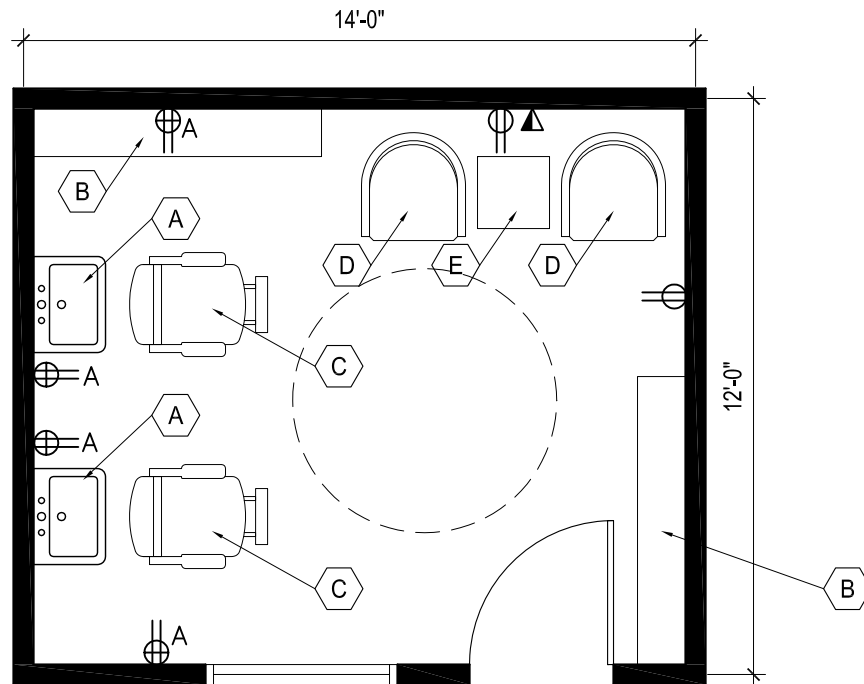
Room Number: J2
 Room Name: Barber / Salon
 Category: Resident Support Area

Number of Occupants: 5

REQUIREMENTS	
UTILIZATION	
8 hours per day	X
14 hours per day	
24 hours per day	
Other	
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F, Max 50% RH
Winter	72 deg F, Min 30% RH
Min. Air Changes / Hour	N/A
Min. % Outside Air	As per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 35 NC
PLUMBING	
Adjacent Toilet Room	
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	
Sinks	X
As Required	

ARCHITECTURAL	
Floors	
Vinyl	X
Carpet	
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Integral coved
Walls	
Gypsum Board	X
Paint	X
Wall Covering	
Ceramic Tile	
Ceilings	
Exposed	
Acoustic Tile	X
Gypsum Board	
Height	9'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	3'-0"
ELECTRICAL AS INDICATED	
Borrowed Light	
	X

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Salon-type sink w/ hand spray and mirror	C. Barber's chair
B. Plastic laminate casework w/ adj. shelving & doors	D. Chair
	E. Side table



J2 BARBER / BEAUTY SALON

1/4" = 1'-0" 168 NSF



Northern Utah State Veterans Nursing Home

BARBER / SALON



Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

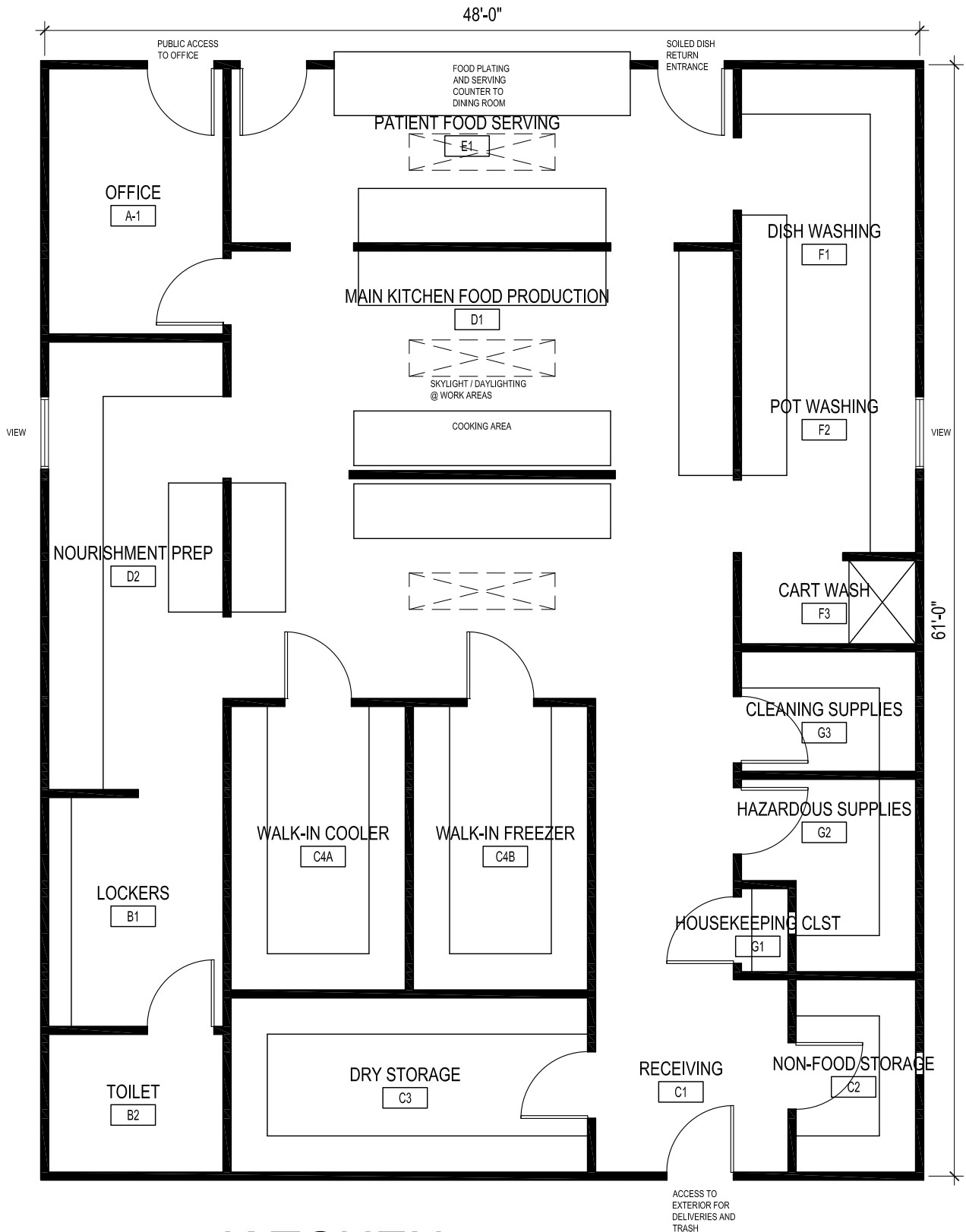
Room Number: J8
 Room Name: Kitchen
 Category: Resident Support Area

Number of Occupants: 5

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	
24 hours per day	
Other	18 Hours Per Day
MECHANICAL	
Temperature / Humidity	
Summer	78 Deg F , Max 50% RH
Winter	72 Deg F, Min 30% RH
Min. Air Changes / Hour	10 AC/H
Min. % Outside Air	As Per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 45 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	X
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	
Carpet	
VCT	
Quarry Tile	X
Ceramic Tile	
Sealed Concrete	
Base	Quarry tile
Walls	
Gypsum Board	X
Paint	
Wall Covering	
Ceramic Tile	X
Ceilings	
Exposed	
Acoustic Tile	Vinyl-faced ACT
Gypsum Board	
Height	9'-0"
Doors	
3'-0" , 3'-6" , 3'-8" , 4'-0"	3'-0"
ELECTRICAL AS REQUIRED	
Skylights	X
Borrowed Light	X

Equipment (By Contractor): All required equipment for a full-functioning kitchen See equipment list in Section 3.3.5 Food Service	Furnishings (By Owner / FF&E): Coordinate any owner-furnished equipment
---	---



J8 KITCHEN

1/8" = 1'-0"

2,880 NSF





Space Requirements

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

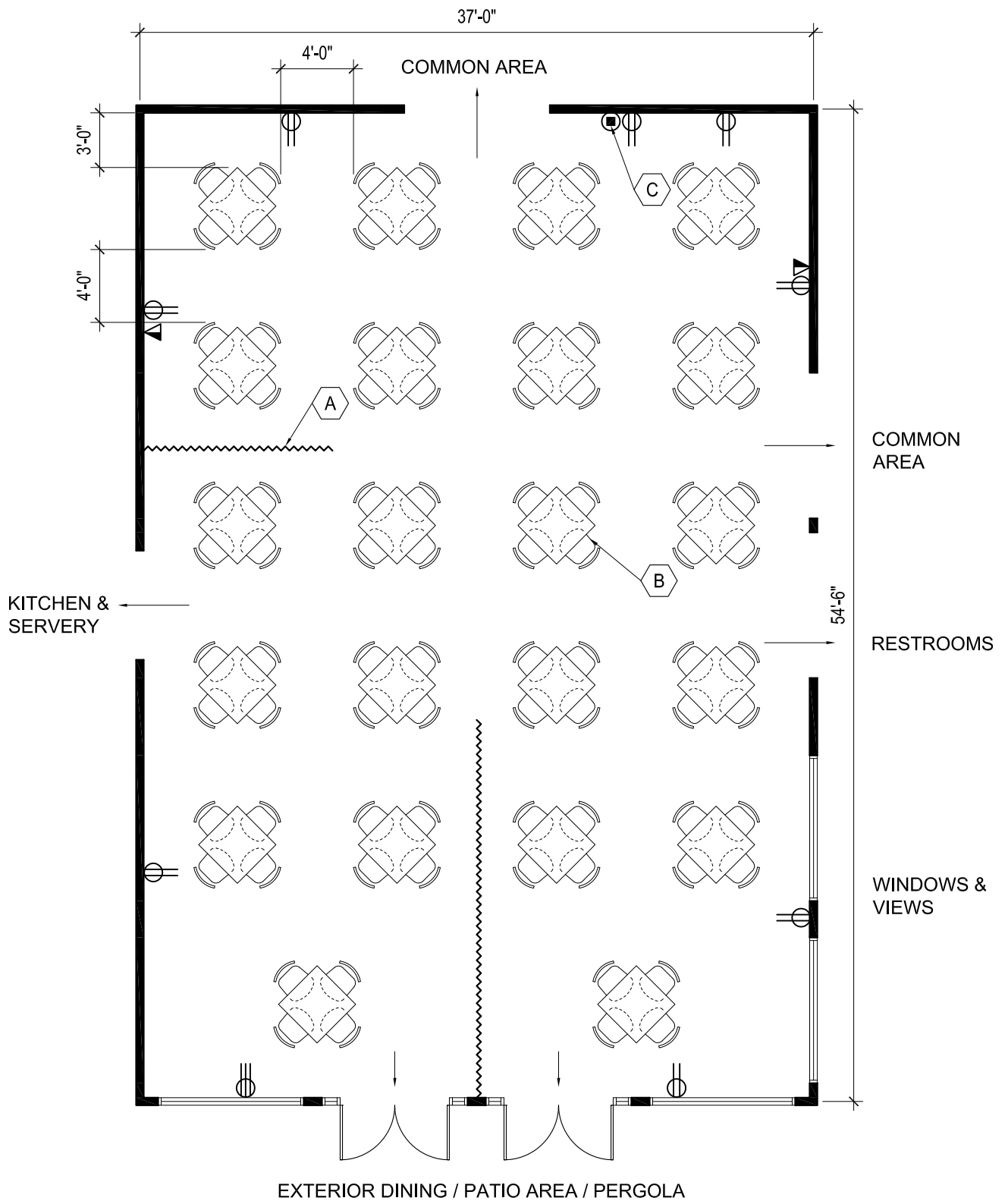
Room Number: J10
 Room Name: Dining Room
 Category: Resident Support Area

Number of Occupants: 90

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	X
24 hours per day	
Other	
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F, Max 50% RH
Winter	72 deg F, Min 30% RH
Min. Air Changes / Hour	10 AC/H
Min. % Outside Air	As per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 45 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	X
Sinks	
As Required	

ARCHITECTURAL	
Floors	
Vinyl	
Carpet	Carpet tile
VCT	
Quarry Tile	
Ceramic Tile	
Sealed Concrete	
Base	Carpet
Walls	
Gypsum Board	X
Paint	X
Wall Covering	X
Ceramic Tile	
Ceilings	
Exposed	
Acoustic Tile	
Gypsum Board	X
Height	10'-0"
Doors	
3'-0", 3'-6", 3'-8", 4'-0"	(2) 3'-0"
ELECTRICAL AS INDICATED	

Equipment (By Contractor):	Furnishings (By Owner / FF&E):
A. Accordion-style folding partitions	B. Tables and chairs
	C. Television



J10

DINING ROOM

1/8" = 1'-0"

2000 NSF



Northern Utah State Veterans Nursing Home

RESIDENT DINING

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

Room Number: K3 – K19

Number of Occupants: 1

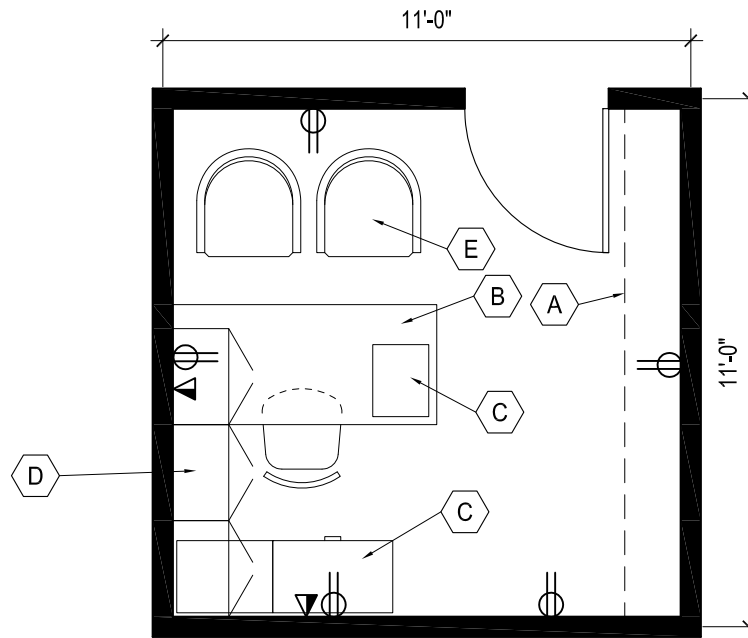
Room Name: Typical Office

Category: Staff and Administrative Area

REQUIREMENTS	
UTILIZATION	
8 hours per day	
14 hours per day	
24 hours per day	
Other	Varies with Function
MECHANICAL	
Temperature / Humidity	
Summer	78 deg F, Max 50% RH
Winter	72 deg F, Min 30% RH
Min. Air Changes / Hour	N/A
Min. % Outside Air	As per ASHRAE Std 62
Pressure	N/A
Noise Criteria	Max 35 NC
PLUMBING	
Adjacent Toilet Room	X
Oxygen - Dedicated Rooms	
Shared Toilet Room	
Toilet	
Lavatory	
Shower	
Floor Drain	
Hydrotherapy Bath	
Tub	
Ice and Water Station	
Sinks	
As Required	

[illegible]

<p>Equipment (By Contractor):</p> <p>A. Plastic laminate adjustable shelving</p>	<p>Furnishings (By Owner / FF&E):</p> <p>B. Desk & chair</p> <p>C. File cabinet</p> <p>D. Storage cabinets</p> <p>E. Chair</p>
--	--



K

TYPICAL OFFICE

1/4" = 1'-0"

121 NSF



Northern Utah State Veterans Nursing Home

OFFICE

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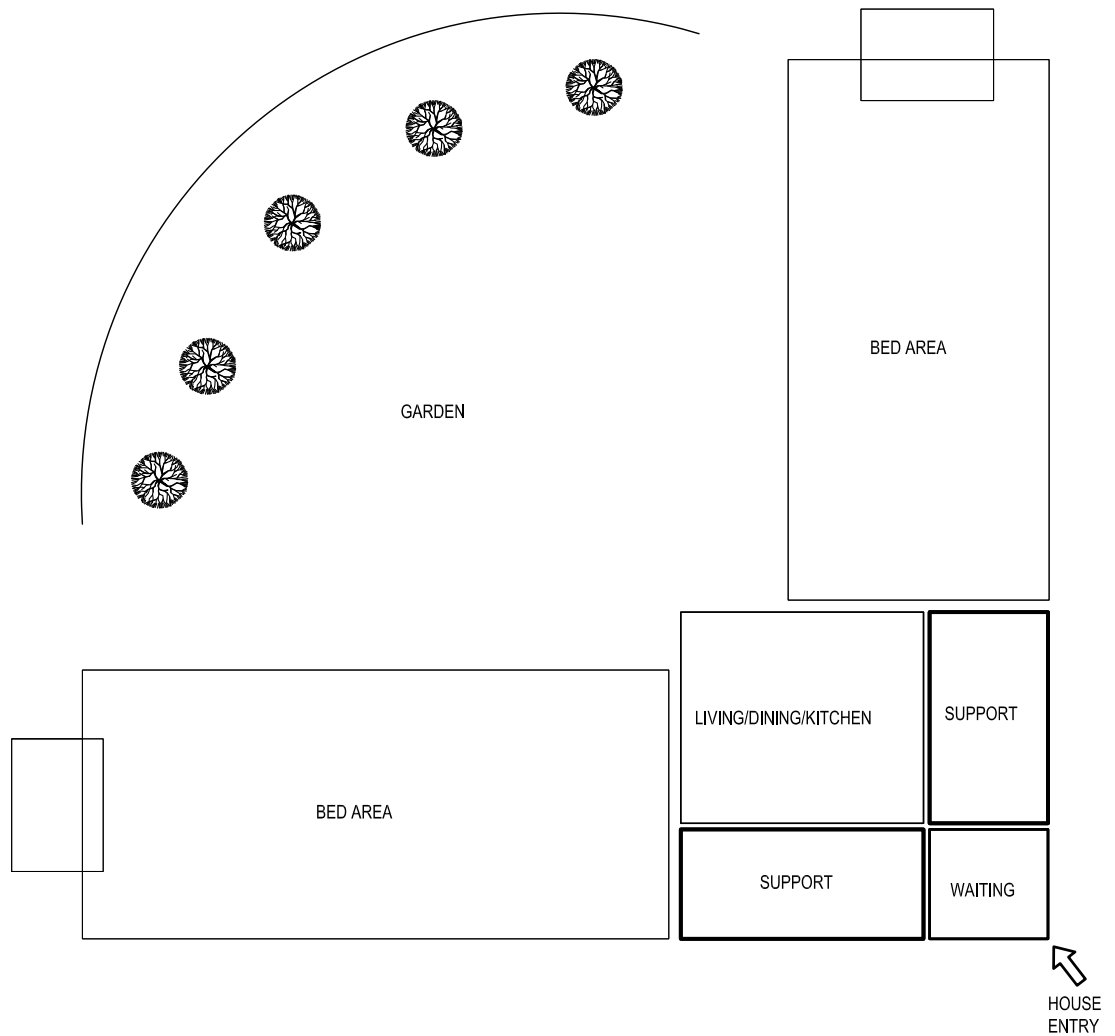
4.3 Adjacencies and Relationships

The building can be organized based upon the VA's nursing home space planning area requirements as they are grouped in **Section 3.2.2 Space Planning Areas** of this program. The following diagrams are generic spatial illustrations which the VA has provided and used successfully in similar projects throughout the country for Federal and State-Owned facilities.

Relationships should be designed for the maximum efficient use and organization of the facility. The following criteria are provided by the VA which shall be considered by the A/E team during the planning phase:

- Common use of resources
- Accessibility of supplies
- Urgency of contact
- Noise or vibration
- Presence of odors or fumes
- Contamination hazard
- Sequence of work
- Resident's convenience
- Frequent contact
- Need for security
- Closeness inappropriate

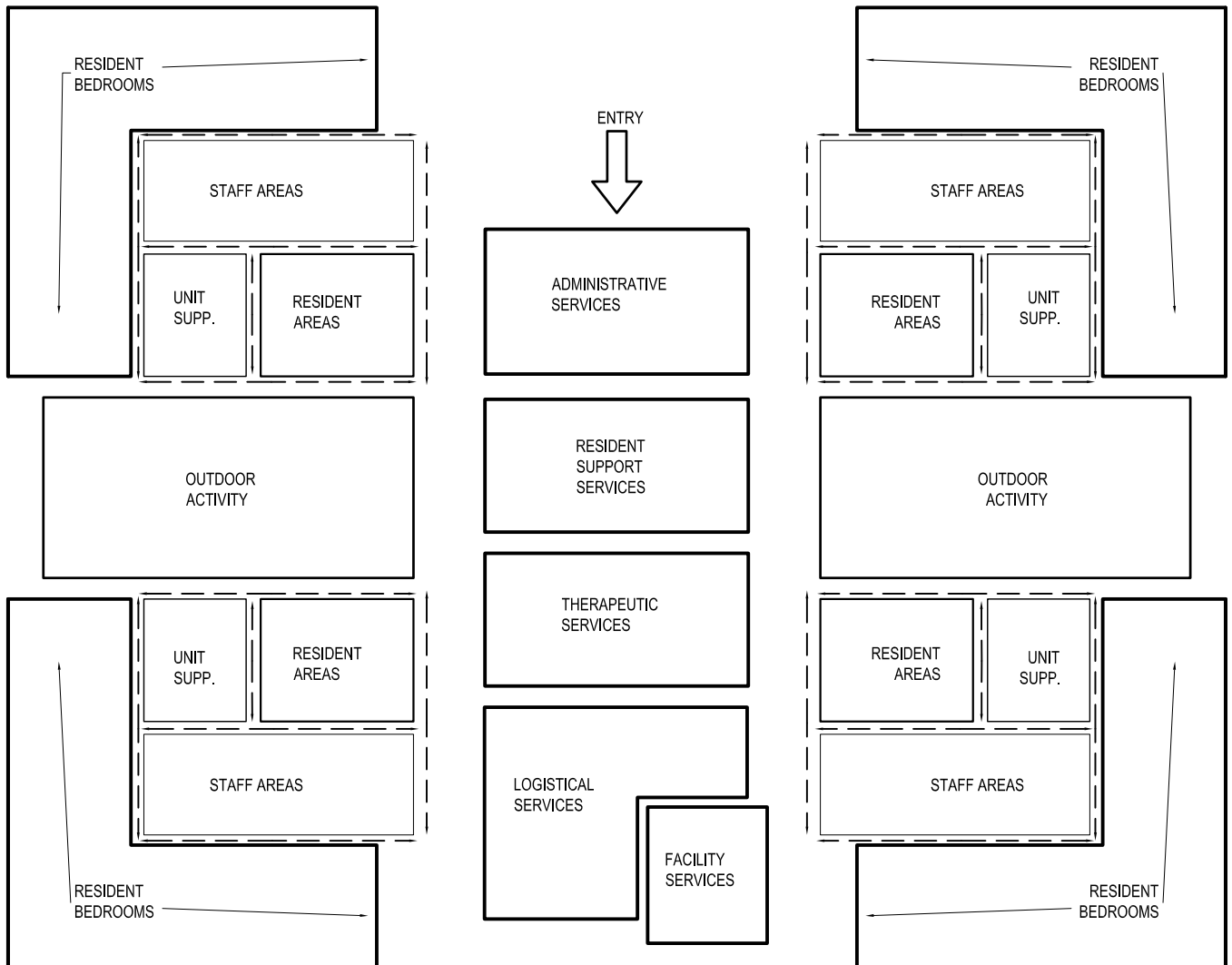
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NURSING HOME / RESIDENTIAL CARE FACILITY - TYPICAL HOUSE



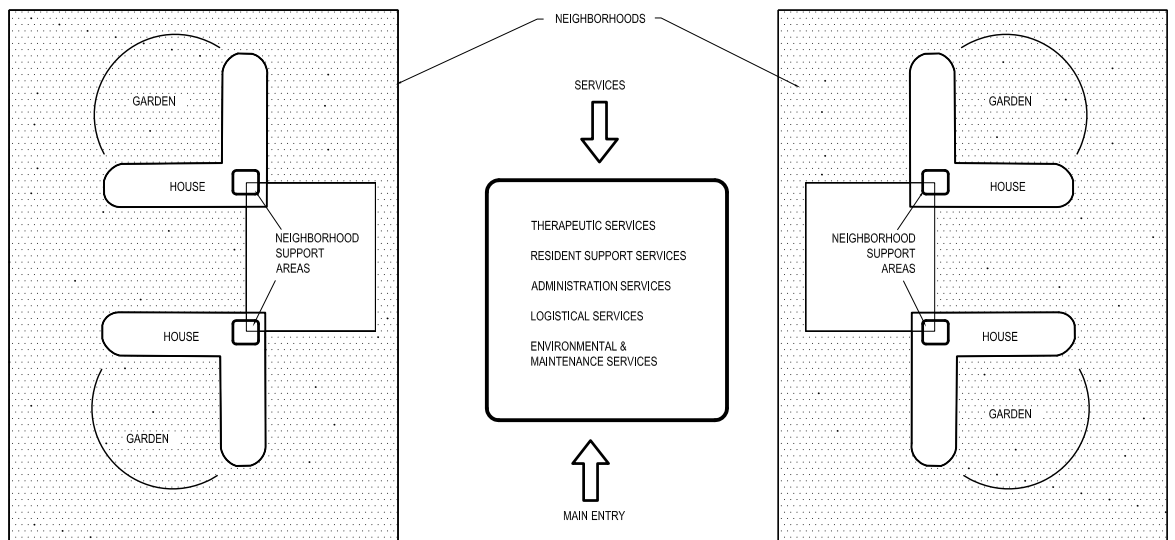
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FUNCTIONAL DIAGRAM



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NURSING HOME / RESIDENTIAL CARE FACILITY



Northern Utah State Veterans Nursing Home

NURSING HOME / RESIDENTIAL CARE FACILITY

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Space Programming

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

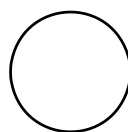
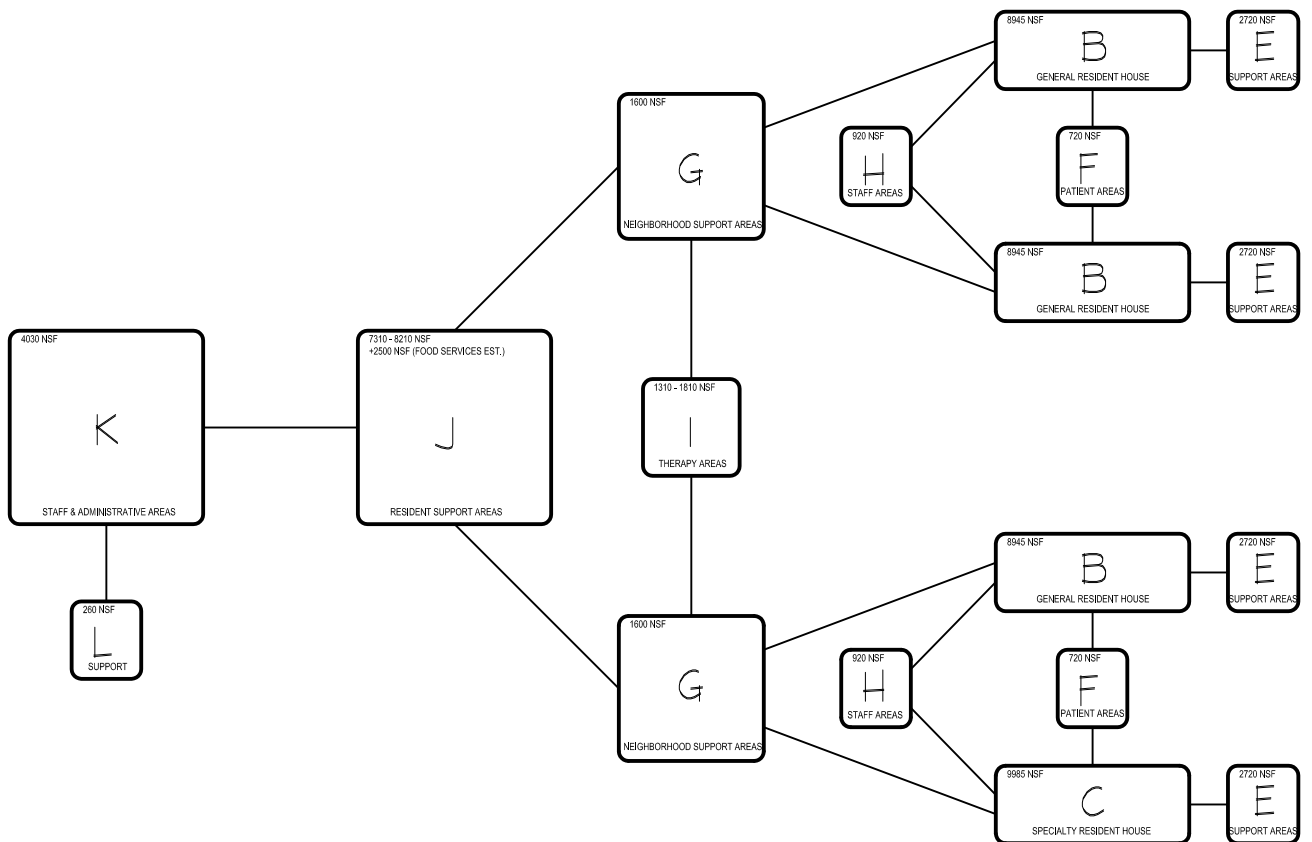
Ogden, Utah

4.4 Building Organization

The following is a diagram which demonstrates the overall physical relationships between the assigned building spaces. This is an illustration which shows adjacencies as they relate to the neighborhood concept for the nursing facility where two resident houses with 30 residents each comprise a residential neighborhood. The program describes a building which has two residential neighborhoods and a total of 120 residents.

A generic site plan provided by the VA is included which shows the relationships of the building's exterior components as described in the program.

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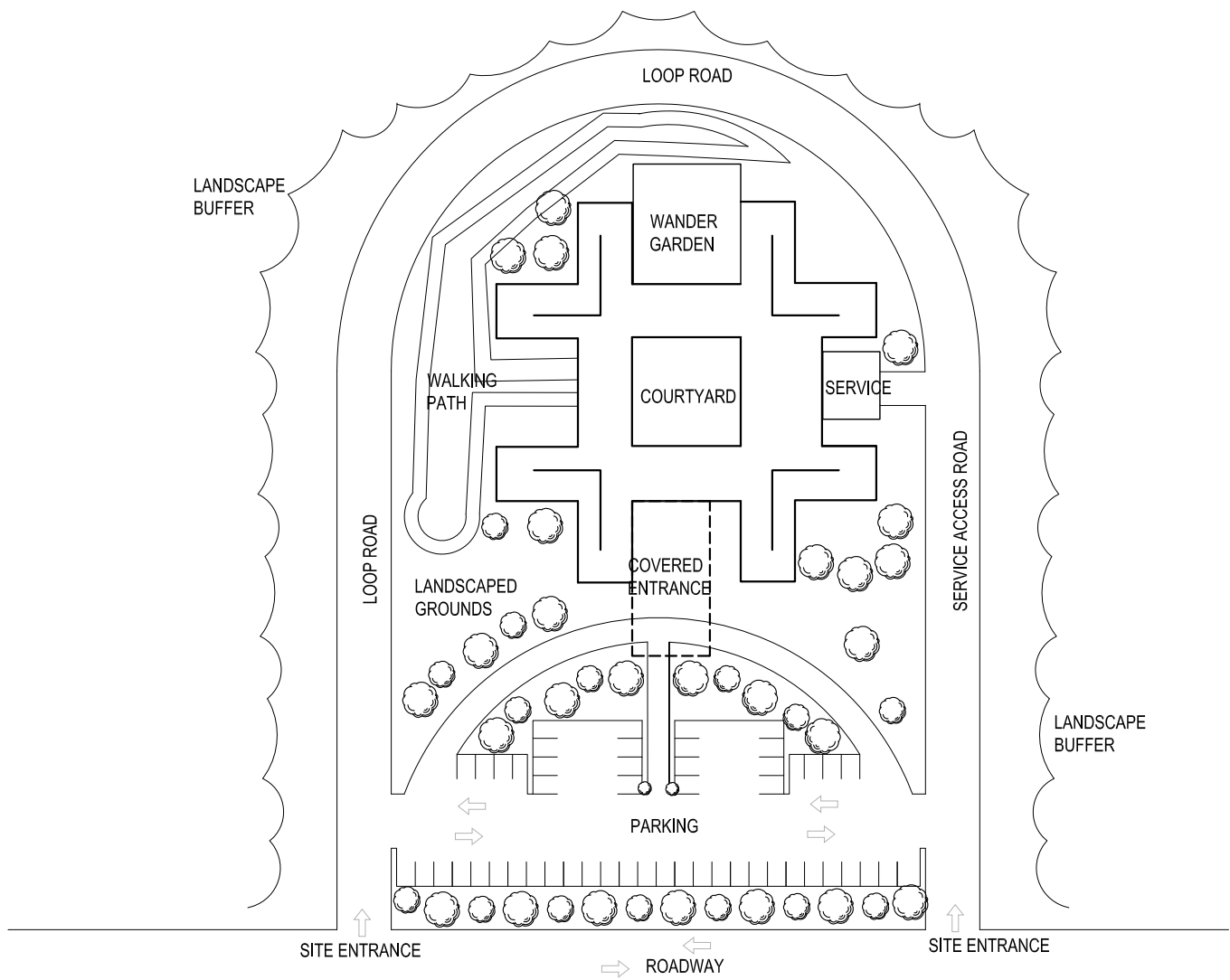


ADJACENCY DIAGRAM



Northern Utah State Veterans Nursing Home

ADJACENCY DIAGRAM



GENERIC SITE PLAN



Northern Utah State Veterans Nursing Home

GENERIC SITE PLAN

5.0 PROJECT COST ESTIMATE



NJRA ARCHITECTS
370 East 500 South Suite 101
Salt Lake City, Utah 84111
801.364.9259

Northern Utah State Veterans Nursing Home

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Cost Estimate

Northern Utah State Veterans Nursing Home

Department of Veterans Affairs

Ogden, Utah

5.0 PROJECT COST ESTIMATE

5.1 Estimated Construction Cost Summary and Detail

The following estimate is an analysis of the estimated cost for construction for the facility described in the program using today's cost data.

CONSTRUCTION RISK MANAGEMENT INC
 FILE: (NUSVNH August 7, 2008 FINAL)
 DATE: (August 7, 2008)

SYSTEMS BUDGET

PROJ: **NORTHERN UTAH STATE VETERANS NURSING HOME**
1200 WEST & BILL BAILEY BLVD, OGDEN UTAH

FOR: **NJRA ARCHITECTS**

EASY EIGHT CATEGORY	TOTAL COST	COST/SF		REMARKS
1 CIVIL/SITE	\$537,975	\$7.51		
2 LANDSCAPING & SITE FINISH	\$387,693	\$5.41		
3 STRUCTURAL	\$1,242,248	\$17.33		
4 ARCHITECTURAL				
a. BUILDING SKIN	\$1,524,766	\$21.27		
b. INTERIOR FINISH	\$3,329,390	\$46.45		
5 MECHANICAL	\$3,300,000	\$46.04		
6 ELECTRICAL	\$2,528,625	\$35.28		
7 GENERAL CONDITIONS	3.60% \$462,996	\$6.46		
BOND	1.00% \$133,137	\$1.86		
CONTINGENCY	8.00% \$1,075,746	\$15.01		
ESCALATION	5.00% \$726,129	\$10.13		
SUBTOTAL COSTS	\$15,248,705	\$212.75		
8 CONTRACTORS OH&P	6.00% \$914,922	\$12.76		
PROJECT TOTAL	\$16,163,627	\$225.51		

BUILDING PERMITS

SCOPE		
AREA BREAKDOWN	NET	GROSS
B - GENERAL RESIDENTIAL HOUSE: RESIDENT AREAS	26,760	33,450
C - SPECIALTY RESIDENTIAL HOUSE: RESIDENT AREAS	9,910	12,388
SUBTOTAL RESIDENTIAL AREA	36,670	45,838
E - RESIDENTIAL HOUSE SUPPORT AREA	1,640	2,050
F - RESIDENTIAL NEIGHBORHOOD: PATIENT AREA	1,350	1,688
G - RESIDENTIAL NEIGHBORHOOD: SUPPORT AREA	1,160	1,450
H- RESIDENTIAL NEIGHBORHOOD STAFF & ADMIN.	220	275
I - THERAPEUTIC AREAS	1,330	1,663
J - RESIDENTIAL SUPPORT AREAS	11,190	13,988
K - STAFF AND ADMINISTRATIVE AREAS	3,520	4,400
L - STAFF LOCKERS	260	325
SUBTOTAL SUPPORT	20,670	25,838
TOTAL	57,340	71,675
NET TO GROSS CONVERSION FACTOR = 1.25 BASED ON VA SALT LAKE CITY NURSING HOME		

CONSTRUCTION RISK MANAGEMENT INC							
NORTHERN UTAH STATE VETERANS NURSING HOME							
(August 7, 2008)							
	ITEM		QUANT		UNIT	TOTAL	REMARKS
	1 CIVIL/SITE						
	SPECIAL SITE CONDITIONS						
	DEMOLITION			LS	\$0.00	\$0	
	WATER PROBLEMS			LS	\$0.00	\$0	
	BANK PROTECTION			LS	\$20,000	\$0	
	SITE EARTHWORK						
	TOTAL SITE 13 ACRES		566,280				
	CONSTRUCTION SITE		225,242				
	CLEAR SITE		225,242	SF	\$0.50	\$112,621	
	FINISH GRADE SITE		153,567	SF	\$0.20	\$30,713	
	SITE EXCAVATION						
	SITE FILL						
	IMPORTED FILL \ BUILDING 2'-0		5,309	CY	\$22.00	\$116,804	
	BUILDING EARTHWORK						
	MACH EXCAV		2,205	CY	\$6.00	\$13,232	
	BACKFILL		1,323	CY	\$25.00	\$33,081	
	GRAVEL/SLABS		876	CY	\$25.00	\$21,901	
	FINE GRADE		71,675	SF	\$0.05	\$3,584	
	HAUL OFF		882	CY	\$12.00	\$10,586	
	FOUNDATION WATERPROOFING		7,443	SF		\$0	
	FOUNDATION INSULATION 2'		7,443	SF	\$2.00	\$14,886	
	SITE UTILITIES		270	LF	\$100.00	\$27,000	
	SITE LIGHTING		153,567	SF	\$1.00	\$153,567	
	TOTAL CIVIL/SITE					\$537,975	
	2 LANDSCAPING & SITE FINISH		153,567				
	LANDSCAPING	Allow	84,942	SF	\$2.50	\$212,355	
	AREA		Above	SF			
	SOD		Above	SF	\$0.50		
	PLANTING BEDS		Above	SF	\$1.50		
	ROCK MULCH		Above	SF	\$1.00		
	PLANTINGS						
	TREES		Above	EA	\$350.00		
	LARGE SHRUBS		Above	EA	\$35.00		
	SMALL SHRUBS		Above	EA	\$10.00		
	IRRIGATION		Above	SF	\$0.50		
	SITE FINISH						
	ALLOWANCE			SF	\$3.50		
	ASPHALT		58,625	SF	\$1.50	\$87,938	
	SITE CONCRETE						
	SIDEWALKS & PAVING	Allow	10,000	SF	\$4.00	\$40,000	

CONSTRUCTION RISK MANAGEMENT INC						
NORTHERN UTAH STATE VETERANS NURSING HOME						
(August 7, 2008)						
	ITEM		QUANT		UNIT	TOTAL
	REMARKS					
3 STRUCTURAL						
	CONCRETE		\$519,181			
	FOOTINGS ALLOWANCE		73,338	SF	\$1.75	\$128,342
	FOUND WALLS		7,443	SF	\$18.00	\$133,977
	MISCELLANEOUS					
	PIERS		0	EA		
	SLAB ON GRADE		71,675	SF	\$3.50	\$250,863
	MISC CONCRETE ITEMS					
	EQUIPMENT PADS & CURBS		1	LS	\$3,000.00	\$3,000
	COLUMN BLOCKOUT & FILL		1	LS	\$1,500.00	\$1,500
	GROUT COLUMNS		1	LS	\$1,500.00	\$1,500
	STRUCTURAL FRAME					
	NEW CONSTRUCTION					
	ROOF FRAMING		73,338	SF	\$12.00	\$880,056
	STRUCT, JOIST & MTL DECK		73,338	SF	Above	
	CMU WALLS		2,112	SF	\$14.00	\$29,573
	SEISMIC					
	NEW CONSTRUCTION			SF	Above	
	FIREPROOFING					
	NEW CONSTRUCTION		73,338	SF	\$0.00	\$0
	MISCELLANEOUS ALLOWANCE		\$75,756			
	STEEL		71,675	SF	\$0.50	\$35,838
	CONCRETE		71,675	SF	\$0.25	\$17,919
	EXPANSION JOINTS		880	LF	\$25.00	\$22,000
	TOTAL STRUCTURAL					\$1,242,248
4 ARCHITECTURAL						
	a. BUILDING SKIN		41,682	SF		
			\$1,038,069		\$24.90 /SF	
	EXTERIOR SUBSTRATE					
	METAL STUDS, SHEATHING & INSULATION		41,682	SF	\$6.00	\$250,090
	MASONRY					
	BRICK/STONE WAINSCOT 4'-0		11,909	SF	\$16.00	\$190,545
	MANSARD 'FAUX' ROOF AT PARAPET 4'-0		11,909	SF	\$20.00	\$238,181
	EIFS BALANCE		17,864	SF	\$9.00	\$160,772
	ALUMINUM & GLASS					
	STORE FRONT		824	SF	\$45.00	\$37,080

CONSTRUCTION RISK MANAGEMENT INC						
NORTHERN UTAH STATE VETERANS NURSING HOME						
(August 7, 2008)						
ITEM		QUANT		UNIT	TOTAL	REMARKS
b. INTERIOR FINISH						
CARPENTRY & MILLWORK		\$202,550				
ROUGH CARPENTRY						
	BLOCKING & MISC ALLOWANCE	71,675	SF	\$1.00	\$71,675	
FINISH CARPENTRY ALLOWANCE		71,675	SF	\$1.00	\$71,675	
MILLWORK ALLOWANCE						
	NURSES STATION 37 LF / EA	4	EA	\$14,800	\$59,200	
	MISC ALLOWANCE	71,675	SF	\$1.00	\$71,675	
DOORS, FRAMES & HARDWARE						
	INTERIOR DOORS	435	PC	\$1,200.00	\$522,000	
	VISION PANELS		EA	\$75.00	\$0	
GYPSUM BOARD					\$0	
	METAL FRAMING	\$715,198				
	WALLS	97,306	SF	\$1.70	\$165,421	Verify at Party Walls
	CEILING	48,945	SF	\$1.70	\$83,206	
	LIGHT COVE	1,910	LF	\$10.00	\$19,099	
GYPSUM BOARD						
	PARTITIONS	194,612	SF	\$1.40	\$272,457	
	SUB-LAYER		SF	\$0.95	\$0	Verify at Party Walls
	EXTERIOR WALLS	Above	SF	\$1.15		
	CEILINGS	48,945	SF	\$1.40	\$68,522	
	LIGHT COVE	1,910	LF	\$15.00	\$28,648	
	ACOUSTIC INSULATION	97,306	SF	\$0.80	\$77,845	
	SHAFT / FIRE WALL		SF	\$6.00	\$0	
FLOORING		\$342,736				
	SOLID VINYL	39,600	SF	\$3.50	\$138,600	
	VCT	610	SF	\$3.50	\$2,135	
	CARPET	22,885	SF	\$3.50	\$80,096	
	CARPET TILE	0	SF	\$3.50	\$0	
	QUARRY TILE	3,130	SF	\$14.00	\$43,820	
	CERAMIC TILE	0	SF			
	SEALED CONCRETE	5,451	SF	\$0.75	\$4,088	
	ENTRY MAT	Allow	1	LS	\$2,500.00	\$2,500
BASE						
	INTEG. VINYL	13,753	LF	\$3.00	\$41,259	
	CARPET	5,999	LF	\$3.00	\$17,996	
	RUBBER	1,850	LF	\$4.50	\$8,326	
	QUARRY TILE	280	LF	\$14.00	\$3,916	
CEILINGS		\$26,000				

CONSTRUCTION RISK MANAGEMENT INC							
NORTHERN UTAH STATE VETERANS NURSING HOME							
(August 7, 2008)							
	ITEM		QUANT		UNIT	TOTAL	REMARKS
	PAINTING		\$410,845				
	GYP SUM BOARD		124,664	SF	\$0.65	\$81,032	
	DOORS		435	PC	\$50.00	\$21,750	
	EXPOSED STRUCTURE PAINT		12,211	SF	\$1.25	\$15,263	
	ACOUSTIC PANELS		4,789	SF	\$15.00	\$71,841	
	WALL COVERING OVER GYP BD		43,101	SF	\$2.50	\$107,751	
	FRP PANELS		13,807	SF	\$6.00	\$82,841	
	WHITE BOARD		894	SF	\$6.00	\$5,367	
	MISC ALLOWANCE		1	LS	\$25,000	\$25,000	
	SPECIALTIES		\$255,159				
	BATH ACCESSORIES						
	RESIDENCE		65	RMS	\$500.00	\$32,500	
	OTHER		15	RMS	\$750.00	\$11,250	
	FIRE EXTINGUISHERS		1	LS	\$5,000.00	\$5,000	
	MISC SPECIALTIES		71,675	SF	\$0.25	\$17,919	
	MISC EQUIPMENT		71,675	SF	\$0.10	\$7,168	
	SHADES & CURTAINS		\$152,320				
	RESIDENTIAL WINDOW SHADES		1,920	SF	\$5.00	\$9,600	
	COMMON AREA		824	SF	\$5.00	\$4,120	
	CORNER GUARDS		1	LS	\$10,000	\$10,000	
	WALL RAIL		1,936	LF	\$50.00	\$96,800	
	LOCKERS / STAFF		120	EA	\$265.00	\$31,800	
	ROOM SIGNAGE		71,675	SF	\$0.30	\$21,503	
	CHALK & MARKER BOARDS	Allow	1	LS	\$7,500	\$7,500	
	EQUIPMENT		\$350,000				
	KITCHEN EQUIPMENT	Allow	1	LS	\$250,000	\$250,000	
	LAUNDRY EQUIPMENT	Allow	1	LC	\$100,000	\$100,000	
	FF&E ITEMS					NIC	See Recap Sheet
		TOTAL b. INTERIOR FINISH				\$3,329,390	
	5 MECHANICAL						
	ENGINEERS ALLOWANCE						
	MECHANICAL ALLOWANCE		71,675	SF	\$46.04	\$3,300,000	20% Budget \$16,500,000
	FIRE PROTECTION						Included Above
		TOTAL MECHANICAL				\$3,300,000	

CONSTRUCTION RISK MANAGEMENT INC							
NORTHERN UTAH STATE VETERANS NURSING HOME							
(August 7, 2008)							
	ITEM		QUANT		UNIT	TOTAL	REMARKS
	7 GENERAL CONDITIONS						
	GENERAL CONDITIONS		12	MO			
	SUPERVISION						
	SUPERINTENDENT		52	WK	\$2,000.00	\$103,920	
	FOREMAN/LAYOUT		52	WK	\$1,200.00	\$62,352	
	CLERK		52	WK	\$800.00	\$41,568	
	UTILITIES						
	ELECTRICAL SERVICE		1	LS	\$10,000	\$10,000	
	ELECTRICAL		12	MO	\$600.00	\$7,200	
	WATER		12	MO	\$100.00	\$1,200	
	TOILETS		12	MO	\$250.00	\$3,000	
	PHONE		12	MO	\$700.00	\$8,400	
	FIELD OFFICE						
	OFFICE & STORAGE		12	MO	\$500.00	\$6,000	
	EQUIPMENT						
	PICKUP		12	MO	\$250.00	\$3,000	
	FORK LIFT		12	MO	\$2,500.00	\$30,000	
	GAS & OIL		12	MO	\$300.00	\$3,600	
	SMALL TOOLS % OF LABOR		500,000		4.00%	\$20,000	
	CRANE		In Units	MO	\$18,000		
	CLEAN UP						
	AREA		71,675	SF	\$0.75	\$53,756	
	WEATHER PROTECTION		5	MO	\$15,000	\$75,000	
	SNOW REMOVAL		5	MO	\$2,000	\$10,000	
	MISCELLANEOUS						
	SUNDRIES		12	MO	\$2,000.00	\$24,000	
	BOND						Included in Recap
	CONTINGENCY						Included in Recap
	ESCALATION						Included in Recap
	TOTAL GENERAL CONDITIONS					\$462,996	

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